Disaster response and adaptation to climate change in Fiji and Tonga: remote island perspectives

By

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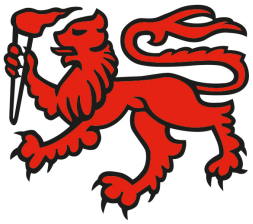

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"*Only after they disappear will the islands become the absolute truth of the urgency of climate change, and thus act as a prompt towards saving the rest of the planet*"(Farbotko, 2010, p47-48).

"*What kind of society creates the conditions that result in one population with the means to escape suffering and another population <u>without</u> the means to escape suffering?*" (Nickel and Eikenberry, 2007, p.538).

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This thesis contains no material which has been accepted for a degree or diploma by the University of any other institution, except by way of background information and duly acknowledged in the thesis, and to the best of my knowledge and belief no material previously published or written by another person except where due acknowledgement is made in the text of the thesis, nor does the thesis contain any material that infringes copyright.

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Heckenberg, D. and Johnston, I. (2012) Climate change, gender and natural disasters: Social differences and environment-related victimisation. In R. White (ed.) *Climate change from a criminological perspective*. Routledge Press: London

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Abstract

In the South Pacific, an area prone to disasters of many kinds, tropical cyclones are predicted to increase in strength, track length and lifespan due to climate change. Small island developing states are going to need to adapt their disaster response accordingly. This is particularly the case for those communities on outer islands of these states, the remote islands within remote countries, where vulnerability is already especially high. These communities are out of reach of many aid organisations, and are required to be more self-reliant and resilient than most.

This thesis investigates how the responses to disasters on remote islands need to change and the factors affecting the capacity for this to happen. The research focuses on remote islands in Fiji and Tonga, from the perspectives of the communities, aid organisations and governments. It examines issues of the growth of aid, the expectations it creates, the governance of the aid system, and how remoteness impacts on disaster planning and response.

The research involved fieldwork in Fiji and Tonga, with stays on one remote island in each country. Both of these islands have a history of cyclones, including recent experience. This was followed by time in the regional and national capitals interviewing representatives of aid organisations and government. Included in the thesis is a reflection on the experience of doing cross-cultural research and the importance of giving voice to communities that are often left out of this kind of research.

The research found that a number of variables – such as remoteness, the highly gendered structures of decision-making, differential use of traditional knowledge, and contradictory aid expectations – directly and indirectly affect the preparedness and adequacy of remote island responses to natural disasters such as cyclones. This has a number of significant ramifications in the light of predicted transformations associated with climate change.

Table of contents

List of tables

List of figures

List of photos

Acronyms and Abbreviations

ADB - Asian Development Bank

BOM - Bureau of Meteorology

CC - climate change

CCA - climate change adaptation

CSIRO - Commonwealth Scientific and Industrial Research Organisation

CSO - civil society organisation

DISMAC – Disaster Management Committee (Fiji)

DRM - disaster risk management

DRR - disaster risk reduction

FBO - faith based organisation

JNAP - Joint National Action Plan on Climate Change Adaptation and Disaster Risk Management (Tonga)

MECC – Ministry of Environment and Climate Change (Tonga)

NDMO - National Disaster Management Office (Fiji)

NEMC – National Emergency Management Committee (Tonga)

NEMO - National Emergency Management Office (Tonga)

NEOC – National Emergency Operating Committee (Tonga)

NGO -non-government organisation

ODI - Overseas Development Institute

SLR - sea level rise

SOPAC - Applied Geoscience and Technology Division of the Secretariat of the Pacific Community

SRDP - Strategy for Disaster and Climate Resilient Development in the Pacific

UNU – United Nations University Institute for Environment and Human Security

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There may be only one name on the front page of a thesis, but in reality there is a small army of people in the background making it possible.

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Introduction

This thesis looks at the experience, expectations and perceptions of remote outer island communities in Fiji and Tonga, regarding disaster aid and climate change adaptation. It asks how similar or different these may be to the main islands, and the disaster management literature more generally, and aims to investigate how disaster responses on remote islands in Fiji and Tonga need to and are able to adapt to a changing climate. The main research questions are to identify how tropical cyclones are presently responded to in Fiji and Tonga by remote communities, aid organisations and government and; how responses might need to change into the future as climate change intensifies these events, and combines with other climate change impacts such as rising sea levels.

Climate change is bringing with it an increase in severity of natural disasters, particularly affecting small island developing states (Nurse, McLean, Agard et al., 2014; Intergovernmental Panel on Climate Change (IPCC), 2012; Deo, Ganer and Nair, 2011; Terry, 2007; Mimura, Nurse, McLean et al., 2007). This increases the need to ensure and enhance the effectiveness of responses to these disasters from all involved - governments, aid organisations, and the affected communities. While debates around the causes of climate change continue despite the strength of scientific evidence (IPCC, 2013), the impacts are not waiting for the final verdict from the politicians and policy makers. Climate change is here, and we must deal with the effects.

The costs of extreme weather events are increasing worldwide, both in terms of lives lost, and economic losses (IPCC, 2011). Sufficient evidence exists to be able to presume that disasters will increase in intensity and perhaps in frequency, over the coming years, as climate change effects such as warming ocean surface temperatures take hold (Mimura et al., 2007). Ten of the 15 most extreme weather events have occurred in the last 15 years, and disasters since 1950 have become more intense (Bettencourt, Croad, Freeman et al., 2006). Coupled with this, is the observation that natural disasters such as cyclones/hurricanes seem to be changing location and moving outside their traditional ‘zones’ (Oxfam International, 2007).

While the concrete scientific link between climate change and individual disaster events is controversial and difficult to establish for extreme weather events that occur relatively infrequently and therefore have less data available in relation to them, the overall trends are becoming clear (IPCC, 2012; Anderson, 2006). Sea level rise is being measured and documented, and is making storms more hazardous as waves and storm surges come further inland. The effects of severe weather events are being felt already, and thus, there is a need to take action now. With one in five people in the world currently living in coastal areas that are and will be affected by rising sea levels and natural disasters (McAdam, 2010), this will be a significant issue for the future. The humanitarian consequences of climate change are poorly understood and this has been identified as an area of need for research (Moriniere, Taylor, Hamza and Dowling, 2009).

Disasters used to be thought of simply in terms of the actual physical event. An extreme weather event or hazard, such as a tropical cyclone, which reaches landfall only on uninhabited islands, or an inhabited coastline but without doing any damage to infrastructure or life remains a hazard, but in what sense can the impact be considered a disaster? In more recent thinking, disasters have been defined in terms of the interaction between the event and pre-existing vulnerabilities:

> Severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic or environmental effects that require immediate emergency response to satisfy critical human needs and that may require external support for recovery (IPCC, 2012, p558).

An extreme weather event becomes a ‘natural disaster’ when the consequences it triggers overwhelm the capacity of the local response and seriously affect the social and economic development of a region (Ferris and Petz, 2011). If the same tropical cyclone as in the example above struck elsewhere in the world causing widespread damage beyond the capabilities of

the local authorities to respond, then that hazard is considered to have become a disaster.

A hazard is:

> The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources (IPCC, 2012, p560).

The hazard then, is the physical event that holds the potential to cause severe negative impacts, thus becoming a disaster. The extent to which those negative impacts will occur depends on the interaction of the hazard with existing vulnerabilities of the society or community in which the hazard occurs. Where the cyclone referred to above meets strong, robust, well-designed and constructed buildings, the results will almost certainly differ from if that cyclone meets already weak and flimsy shacks in a community that lacks sound infrastructure. Similarly, where the people in an affected area have somewhere strong, safe and accessible to shelter, the results will be different compared to an area where there is no safe place to be during the storm or hazard event. These differences are contained in the concept of vulnerability, which may take many forms, including that which is economic, social and political. Vulnerability is defined as:

> The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts including sensitivity or susceptibility to harm and lack of capacity to cope and adapt *(*IPCC 2014b, p.28).

Placing the definition within the context of hazards, vulnerability is "the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impacts of natural hazards" (Wisner, Blaikie, Cannon and Davis, 2004, p.11).

This refined definition of a disaster is critical, since it means that preventing disasters, or reducing the risk associated with them, becomes possible. Rather than focusing on the actual hazard event, the focus is on the underlying

vulnerabilities. This reflects the view that disasters are social, not just natural phenomena, with humans being able to act and take decisions to reduce the likelihood of disaster or reduce the impacts (Lavell and Ginnetti, 2014).

Natural disasters may be viewed as having three phases - the evolution of vulnerability through social processes preceding the disaster, the actual disaster occurrence itself, and the response/recovery (Mutter and Barnard, 2010). For example, the construction of new dwellings on a flood plain represents the evolution of vulnerability through the social processes that led to the dwelling being constructed in a risky location. The hazard, in this case the flood, then occurs some time later, with the vulnerability meaning that for the residents the flood event may become a disaster. The final phase of the disaster is the response/recovery to the event.

This disaster response may be further divided, in temporal sequence, into emergency relief, recovery and reconstruction. Aid is provided with immediate humanitarian aid first, which may take the form of for example food, water and temporary shelter. This is followed later by recovery of livelihoods through for example the re-planting of crops, and finally the reconstruction phase that may involve the reconstruction of dwellings. The loop is complete with the next phase of the evolution of vulnerability, which may be more, less or different to the vulnerability that existed prior to the hazard event. This circular sequence of events is often referred to as the disaster management cycle - event, response, recovery, mitigation, preparedness, event (O'Brien, O'Keefe, Gadema and Swords, 2010).

The responses to climate change are often divided into two baskets - mitigation to reduce human-induced climate change, and adaptation to adjust to climate change. Of particular relevance to this study, adaptation in this context is defined as:

> The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects.

> Incremental adaptation: Adaptation actions where the central aim is to maintain the essence and integrity of a system or a process at a given scale.
>
> Transformational adaptation: Adaptation that changes the fundamental attributes of a system in response to climate and its effects (IPCC 2014b, pp. 1-2).

There is a growing realisation of the connections between development and sustainability, and that one essential element will be to better align disaster risk reduction and climate change adaptation efforts, so as to lessen the likelihood that hazards or extreme weather events become disasters in the first place. Across the South Pacific, momentum is building for this alignment in policy (Bijay, Filho and Shulte, 2013). Alongside this shift though, there is the long held recognition that increases in expectations and dependence on disaster and development aid lead to a weakening, rather than a strengthening of resilience and self-reliance (United Nations Conference on Trade and Development Secretariat (UNCTAD Secretariat) and United Nations Disaster Relief Organization (UNDRO), 1983). Studies in indigenous communities including on small Pacific islands have shown the negative impact of disaster relief on self-reliance to be long lasting (Lewis, 2009).

Two possible and opposing effects of aid on disaster risk reduction have been proposed at a national level. There may be either:

- a preventive effect whereby the aid directly or indirectly improves preparedness,
- or a so-called ‘crowding-out effect’ with expectations of reliable aid leading to a neglect of risk reduction responsibilities (Raschky and Schwindt, 2009).

A study in Bangladesh following a cyclone in 1991 brought that concept to a community level showing that aid can lead to disaster victims losing interest in risk reduction measures (Haider, Rahman and Huq, 2006).

Fiji is experiencing an expansion of actors in its disaster aid arena, increasing the provision of aid and challenging co-ordination and governance (Fletcher, Thiessen, Willetts et al., 2013). This adds to what is already a complex disaster risk management system in a country with a noted problematic culture of dependence (Becker, 2012; Méheux, Dominey-Howes and Lloyd, 2010; Benson, 1997). Tonga does not have the same proliferation of people and organisations involved in disaster response, but also experiences difficulties with co-ordination and governance of the disaster response and aid systems, structures and bureaucracies. As the expansion moves Fiji towards what has been termed 'competitive humanitarianism', the interests of donors and aid organisations become increasingly important (Stirrat, 2006).

A civil society is a "non-governmental and non-profit entity that seeks to bring about positive social and environmental change…can be 'multi-national' and international in nature, or small grass-roots groups" (United Nations, 2010). The integration of disaster risk management and climate change adaptation strategies in the Pacific are experiencing similar difficulties with a large number of organisations involved (Gero, Méheux, and Dominey-Howes, 2010).

Bottom-up approaches, coming from the community instead of being imposed upon them, have been called for in relation to policy and disaster risk reduction, but remain uncommon (O'Brien, Bhatt, Saunders et al., 2012). This has been noted as an issue in Fiji in particular (Becker, 2012), and it is not clear to what extent these strategies filter through to remote communities. Remoteness is the product of physical distance, natural features, social processes, history, economic, politics and sociology (Gillis, 2001). Some previous studies have looked at disaster response and aid dependency in Pacific islands (Campbell, 1984) and specifically in remote island communities (e.g. Méheux et al., 2010; Campbell, 1990; McLean, Bayliss-Smith, Brookfield and Campbell 1977). Other more recent studies have addressed climate change adaptation issues, including disaster risk management in Pacific islands (Bijay et al., 2013; Barnett, 2001).

Few studies, however, bring these together to provide the perspectives of the remote island communities on issues they are at the forefront of - natural disasters and climate change. Outside of massive events such as the 2004 tsunami or Hurricane Katrina, communities are often left out of research on disaster response and climate change adaptation, and where included, they are rarely from outer, remote islands (Alam and Collins, 2010). This means that the experiences and coping strategies of those communities located furthest from aid organisation responses are often missing from research.

Coping is:

> the manner in which people act within the limits of existing resources and range of expectations to achieve various ends. In general this involves no more than 'managing resources' but usually means how it is done in unusual, abnormal and adverse situations (Wisner et al., 2004, p113).

Researchers have previously found particular resilience and coping strategies in remote places - "…the remotest parts of the north cope with floods and cyclones that in more developed parts of Australia would constitute a natural hazard or become a disaster" (King, 2007, p661). Nissology, or island studies, suggests that islands may be a good comparison point for mainlands, because they tend to enhance and exacerbate the processes and dynamics in place (Baldacchino, 2004).

This thesis explores how disaster responses need to and are able to adapt to the changing climate, asking in what ways adaptation may occur, and how it can meet the needs of the communities affected by the disasters. Disaster responses here, refers to the phases of relief, recovery and reconstruction. The research is set in the South Pacific, a region at the forefront of change, with high exposure to natural disasters, and high risk small island developing nations. Case studies from Fiji and Tonga are compared and contrasted, as examples informing climate change adaptation and disaster risk management generally.

Thesis overview

In 12 chapters, the thesis describes the affected communities and their relationships with cyclones, the aid provided, how that aid system operates, the issue of expectations and dependence created by the aid, how remoteness impacts, and perceptions of what needs to change in the future. It examines how the adaptive capacity of remote islands is affected by current practices, and how, if at all, the governance of disaster prevention and relief is adapting to the challenges of climate change:

Chapter 1 outlines the background to the issues of cyclones, specifically in the Pacific, and the policy responses, including the linkages between disaster risk management and climate change policies at a regional and country level.

Chapter 2 provides the contextual setting for the research with the key research themes and conceptual framework.

Chapter 3 details the methodology used in this study, and discusses methodological issues. This includes issues relevant to the qualitative ethnographical methods, and issues relating to the cross-cultural nature of this study.

Chapters 4-10 present the results from the fieldwork in Fiji and Tonga. The perspectives of the study communities, governments and aid organisations on cyclones, disaster response, climate change, what is working well and what needs to change are presented. The degree of alignment of perspectives is discussed.

- Chapter 4 details the experiences of cyclones and other natural disasters in the fieldwork locations, including normalising disasters, preparation, finding a safe place, and the immediate aftermath. This chapter is designed to set the scene of the communities in the fieldwork locations, describing the roles cyclones play in their lives, and diversity within the community, through looking at gender and faith.
- Chapter 5 discusses in detail the traditional knowledge of these remote island communities, focusing on natural warning signs of cyclones.

The chapter provides detailed descriptions of particular signs, and notes similarities between the countries, and others in the Pacific.

- Chapter 6 focuses on experiences of disaster aid and relief, and how the system works in each country, including issues of equity and fairness. Examples are given of the types of disaster aid received for different events over time, and the ways in which inequalities and corruption manifest themselves.
- Chapter 7 looks at governance issues and co-ordination between government and aid organisations. The types and role of various organisations involved in disaster aid are discussed, along with how the disaster management and response systems operate, and some of the practicalities involved.
- Chapter 8 looks at the expectations of aid, and dependency on aid, and the relationships between them are explored.
- Chapter 9 looks at issues of remoteness including the ways in which each of the islands in the study is remote, and how that impacts, both positively and negatively on their experiences of disasters and disaster aid, and their adaptive capacity.
- Chapter 10 focuses on perceptions of how the disaster response system needs to change to adapt to climate change. Impacts of climate change, adaptation to those impacts, and options for future adaptation are discussed.

Chapter 11 discusses the similarities and differences between the case studies and between Fiji and Tonga, recent and forthcoming policy changes in these areas, and the relevance of this study for disaster response and recovery and climate change adaptation more broadly. The ways in which the perspectives of the participant groups (governments, aid organisations and communities) align and do not align, and what that means for adaptation and adaptive capacity is analysed. The chapter looks at how the disaster response system can adapt and how the needs of remote communities fit.

Chapter 12 concludes with a reflection on the study and poses questions for future research.

This thesis will investigate the important issue of the adaptation of disaster responses to a climate changed future, focusing on remote island communities at the forefront of those disasters. It is critical to look at the adaptive capacity of the system and the responses of all involved - the communities, the aid organisations and the governments.

Chapter 1 - Cyclones and the policy responses

This chapter presents the background information to the problem at hand - how the responses to disasters, particularly on remote islands, can adapt to climate change. There is a focus on cyclones and the likely impacts of climate change on those cyclones in the South Pacific. This chapter locates the research sites to the broader context - the villages within the societies; the particular disasters relevant to each site within the experiences of disasters for that area and country. Following this is an outline of the key policy responses within relevant national and regional frameworks. In order to interpret the fieldwork results, the relational role of the sites within larger systems is important (Fife, 2005) and this is discussed. The chapter also provides contextual information regarding the integration of the disaster risk management and climate change adaptation policies and practices in the Pacific, including regional and national agreements and frameworks.

1.1 Tropical cyclones in the South Pacific

A cyclone is known by different names according to where on the globe it has formed. In the western North Atlantic Ocean and Caribbean they are known as hurricanes, in the western North Pacific Ocean and China Sea they are known as typhoons, and in the western South Pacific Ocean and the Indian Ocean, they are called tropical cyclones (Terry, 2007). Whatever the terminology, a cyclone is at its most basic level a huge storm with associated strong winds and rains. They require a sea surface temperature of at least 27^{0} Celsius to form (Deo et al., 2011) and are categorised according to the maximum sustained force of the winds by the Saffir-Simpson scale (see Table 1.1 below). Cyclones will also typically have wind gusts that are stronger than the maximum sustained wind strength used in the categorisation method.

Table 1.1: Saffir-Simpson scale for categories of cyclone strength

Saffir-Simpson Category	Maximum sustained wind speed in km/hr
1	119-153
2	154-177
3	178-209
4	210-249
5	>=250

A cyclone forms in a circular motion with an 'eye' somewhere towards the middle of the storm in which there is little to no wind or rain at all. Another feature that often accompanies cyclones is a 'storm surge'. This is where violent winds and low atmospheric pressure combine to form large swells at sea. The winds increase the level of both the water and the wave height, and these swells then drive massive waves towards the shoreline, effectively piling up the sea against the shore. This leads to a temporary but rapid rise in the local sea level that typically takes about one hour to peak and another hour to fall. Near the middle of the cyclone, a storm surge can create a dome of water up to 50km across and two to five metres higher than the predicted tide height (Terry, 2007). The effects of cyclones are therefore connected with other climate change issues such as rising sea levels, as one will exacerbate the other, with higher storm surges leading to larger and more prolonged flooding, and salinsation of ground water resources.

Cyclones will usually weaken when they reach land and this is thought to be because they lose their supply of energy from the warm moist air on the sea surface. However, sometimes when the land they hit is small (such as an island in the South Pacific), they will 'survive', and be able to traverse the entire land mass without significantly weakening (Terry, 2007). In this way, a single tropical cyclone in the South Pacific will often affect more than one country in the region.

The projected impacts of climate change on tropical cyclones

It is not useful to attempt to establish a relationship between a single weather event and climatic change. However, trends over time may be discerned, and predictions made based on past knowledge of how cyclones work. In the South Pacific region, climate change is likely to lead to higher temperatures, and stronger and more persistent El Nino events (Mimura et al., 2007). Some likely impacts of this on tropical cyclones are (Terry, 2007):

- changes to the pattern of cyclone origins, with less spatial clustering and more spreading to the east than at present
- little change in the total cyclone numbers of frequency but generally more storminess east of 180^{0} longitude
- increased tropical cyclone intensities, with lower central pressure and greater maximum wind speeds
- longer cyclone lifespans
- track directions tending more southerly
- extended track length and farther poleward travel before cyclone decay.

This means that while there might not be an increase in the numbers of tropical cyclones forming in the region, they may be stronger. The latest projections from the IPCC provide some support for this, in their special report on extreme weather events and disasters (IPCC, 2012). This report finds that it is likely that tropical cyclone tracks have shifted towards the poles, that the average maximum wind speed will increase, that sea level rise has resulted in increased extremely high water levels in coastal areas, and that the frequency of cyclones globally will remain the same or possibly decrease.

This special IPCC report also directly links social and economic vulnerability to the severity of impact of an event, with higher fatality rates and relative economic losses in developing countries than developed countries. It finds that development practice, policy and outcomes are critical to disaster risk, and that international efforts do not necessarily lead to improvements at the local level, because of a lack of local level data (IPCC, 2012).

The importance of integrating traditional knowledge with scientific and technical knowledge is recognised as being required to improve disaster risk reduction (DRR) and climate change adaptation (CCA) (IPCC, 2011).

Evidence and projections in the South Pacific region

With longer lifespans and extended track lengths, each event may impact on more islands. Both Tonga and the eastern islands in Fiji lie east of 180^{0} longitude, where increased storm activity is expected.

Technology advances over time have increased the accuracy and reporting of tropical cyclone events. For this reason, increased trends in cyclone activity are sometimes attributed to these improvements rather than representing a true increase. In an attempt to address this, Deo and colleagues examined cyclones from 1977-2006, a period that is entirely post the development of satellite technology. This study found in the South West Pacific Ocean a statistically significant increase in intense cyclones and storm days in the period 1992-2006 compared with 1977-1991, and an increase in the maximum annual wind intensity over the entire period (Deo et al., 2011). This increase in the most intense cyclones in the South Pacific has been supported by other, similar studies (Diamond, Lorrey and Renwick, 2013; Kossin, Olander and Knapp 2013) and for projections accounting for climate change (Gleixner, Keenlyside, Hodges et al., 2014).

One of the factors influencing cyclone formation is the El Niño Southern Oscillation of variation on the air pressure and water surface temperatures in the Pacific. The El Niño phase is characterised by warm oceans and high air surface pressure, while the La Niña phase sees the opposite occurring, with cooler oceans and lower air surface pressure (Trenberth, Jones, Ambenje et al., 2007). In two studies concentrating on the Fiji-Samoa-Tonga region, Chand and Walsh found that in the period 1970-2006 there was an average of 4.64 cyclones per El Niño year, 2.94 per neutral year and 2.67 per La Niña year in the region (Chand and Walsh, 2009). Using the Accumulated Cyclone Energy (ACE) rating which is the square of the maximum sustained wind speed summed over the lifetime of the cyclone (a more conservative measure than the Saffir-Simpson categories), they examined cyclones in the region during El Niño and La Niña years. They found that in Fiji and Tonga, the ACE is above average during La Niña years when cyclones retain their strength for a longer period of time, compared with El Niño years (Chand and Walsh, 2011). So for

Fiji and Tonga, climate change may mean more frequent cyclones during longer El Niño events, with cyclones of increased intensity during the 'quieter' La Niña years.

Countries in the South Pacific are feeling the effects of climate change and taking notice. For example, the Ministry of Environment and Climate Change in Tonga has documented the effects of climate change in Tonga: El Niño weather patterns align well with the occurrence of droughts in Tonga, there has been an increase in annual mean temperature of 0.4-0.9^{0}C since the 1970s, coral bleaching is 'becoming common', sea levels have risen 6.4mm per year since records began in 1993, and coastal erosion means that now some low lying coastal villages are inundated with tidal flooding (Ministry of Environment and Climate Change (MECC) and National Emergency Management Office (NEMO) Tonga, 2010).

The effects of cyclones in the region will be further intensified when combined with the effects of sea level rise. The average global sea level rise for the period 1962-1990 was about 1.5mm per year, but since 1990 it has been 3.2mm per year, with the increase mainly due to increases in the tropical and southern oceans (Merrifield, Merrifield and Mitchum, 2009). However, in the Pacific, the increase is far greater, with 6mm per year in Fiji and more than 6mm per year in Tonga since 1993 (Australian Bureau of Meteorology and Commonwealth Scientific and Industrial Research Organisation (CSIRO), 2011). Estimates for Tonga are as high as 14mm per year since 1993 (Jayavanth, Takai and Akau'ola, 2009). In the Pacific, sea levels have been rising for over 100 years, so the effects are already evident, including inundation and erosion, and the salinisation of inland groundwater (Nunn, 2007a). Increases now being experienced in the rate of sea level rise will consequently exacerbate these and other effects.

Pacific island countries need to adapt now - faster than wealthier developed nations, but location specific predictions do not exist, nor do many solutions that have been tested elsewhere (IPCC, 2014c; Barnett, 2001). The uncertainty inherent in some aspects of climate change is exacerbated for the places experiencing the effects first. Small island developing states may be seen as

barometers of how development issues such as climate change will impact communities and how to deal with those impacts (Kelman, 2011).

1.2 Fiji and Tonga

The South Pacific region is divided into Micronesia in the north west, Melanesia in the south west and Polynesia in the east. Micronesia includes the Federated States of Micronesia, Marshall Islands and Palau; Melanesia includes Fiji, Papua New Guinea, Solomon Islands and Vanuatu; and Polynesia includes Tonga, the Cook Islands, Samoa, Tuvalu, Kiribati and Nauru (Lal, Singh and Holland, 2009). The accompanying map (Figure 1) shows parts of both Melanesia and Polynesia, including both Fiji and Tonga, and their geographical relationship to each other and to Australia. Fiji and Tonga are neighbouring countries, with Tonga lying to the southeast of Fiji.

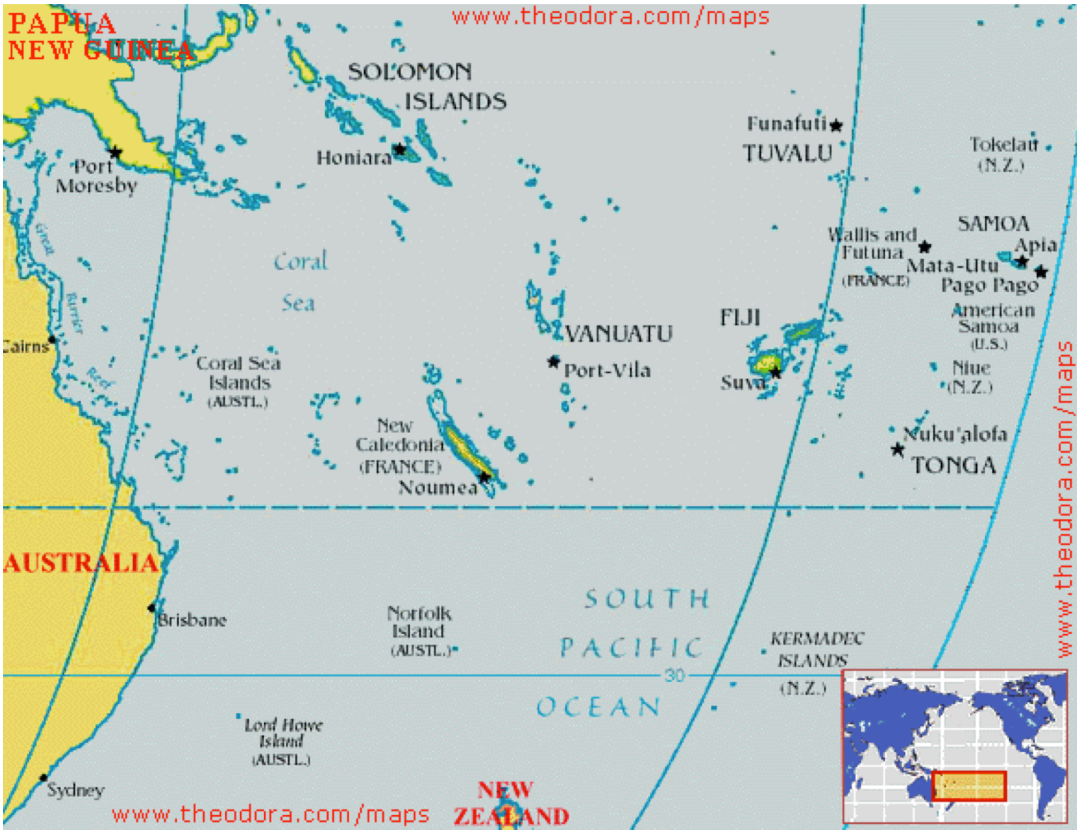

Figure 1.1: Map showing Fiji and Tonga within the South Pacific region.1

[1] Source: http://www.geographic.org/maps/new2/south_pacific_ocean_maps.html

Fiji is a republic of less than one million people, at 18^{0}00'S latitude and 175^{0}00'E longitude in the Melanesian area of the South Pacific. The more than 320 islands that make up Fiji cover a land mass of over 18,000 km^2, and are a mixture of mountainous and volcanic terrain. The largest two islands, Viti Levu and Vanua Levu, are inhabited, along with about 100 of the smaller islands, leaving a population density of about 46 people per km^2.

Tonga is a small Kingdom in the Polynesian area of the South Pacific, at 21^{0}12'S latitude and 175^{0}12'W longitude, with a population of just over 100,000 people. There are 172 named islands in Tonga of which 36 are inhabited, making up an area of 649km^2. The islands are clustered - Tongatapu and 'Eua in the South, Ha'apai in the middle, Vava'u in the north and Niuafo'ou and Niua Toputapu in the far north (MECC and NEMO Tonga, 2010). About half the population lives on the main island, Tongatapu, and 25% of the population live in urban areas (World Bank, 2011). All the atoll islands, and the main island which is limestone, are flat with an average altitude of two to five metres, while Vava'u, Ha'apai and the Niuas that together represent about one quarter of the population, also have some high volcanic islands. Even with the smaller population, the small land mass area of the inhabited islands in Tonga results in a far higher population density than in Fiji, at 144 per km^2.

The South Pacific is one of the most vulnerable regions in the world due to a range of factors including the geographical location and socio-economic factors resulting in a high likelihood of extreme events becoming disasters (e.g. poverty, high dependence on agriculture and traditional subsistence farming, developing nations, population increase, migration within countries to peri-urban areas and places at high risk from extreme weather). There are three South Pacific countries among the World Bank's list of the top 12 countries worldwide in terms of vulnerability to storms (Samoa-8th, Tonga-9th, Fiji-12th) (World Bank, 2009). About 11% of the world's total of around 80 cyclones annually, form in the South Pacific region and the average number of cyclones per year in this region from 1970-2006 was 9, with 27% occurring in the month of February (Terry, 2007). It has been estimated that 13,000 people are at risk of being displaced because of disasters in the South Pacific each

year, including 1,716 in Tonga (from storms/cyclones) and 4,604 in Fiji (from storms/cyclones and flooding) (Lavell and Ginnetti, 2014).

Natural disasters in Fiji

Fiji has a high level of exposure to natural disasters, being positioned in both the 'Ring of Fire', in which most of the world's most devastating earthquakes, volcanic activities and tsunamis occur, and the Pacific cyclone belt. The United Nations University produced a World Risk Index, which in 2011 ranked Fiji 19th out of 173 countries for risk of natural disasters. This index combines the components of exposure to natural hazards such as storms, floods, earthquakes, droughts and sea level rise; susceptibility in terms of the likelihood of suffering harm through public infrastructure, nutrition and general economic conditions; capacities arising from governance, medical services, social and economic security to reduce negative consequences; and capacities for long-term adaptation to future events and climate change (United Nations University Institute for Environment and Human Security (UNU), 2011). An average of 10% of the Fijian population is directly affected by disasters each year, and in the 37 years to 2009, there were 124 natural disasters. Half of these were tropical cyclones, one-third floods, and 8% earthquakes. Tropical Cyclone Bebe in 1972 left more than 20% of the population of Fiji homeless (Lal et al., 2009).

There are two main sources of information for natural disasters in the South Pacific: EM-DAT[2] and the Pacific Disaster Net. EM-DAT is the International Disaster Database maintained by the World Health Organization Centre for Research on the Epidemiology of Disasters (CRED), which has statistics on disasters worldwide since 1950. The South Pacific Applied Geoscience Commission database, Pacific Disaster Net, has statistics on disasters within the South Pacific since 1994 that are more complete than EM-DAT. EM-DAT lists events if there are more than 10 people killed, or 100 people affected, or a call for international assistance or a state of emergency is declared. Cyclones listed in EM-DAT for Fiji have resulted in the deaths of over 500 people, and

[2] EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be – Université catholique de Louvain – Brussels – Belgium.

affected almost 830,000 people. Table 1.2 below combines data from both sources, plus some from the Fiji Meteorological Service, which is the regional cyclone monitoring service (cited in Terry, 2007). The date may be an approximation in some instances when the cyclone lasted for several days and/or the date of impact with Fiji is unclear. The latest cyclone was the category four Cyclone Evan, on 16 December 2012, with an estimated 1,555 houses either destroyed or damaged (Government of Fiji, 2013).

Table 1.2: Tropical cyclones in Fiji, 1980-June 2014

Named Tropical Cyclone (category)	Date	Effects
Evan (4)	12-17 Dec 2012	2 deaths 8,400 people affected USD8.4 million in damages
Daphne	3/4/2012	Unlisted
Bune (2)	24/3/2011	Unlisted
Wilma (4)	23/1/2011	USD 1.9 million in damages
Tomas (4)	12/3/2010	2 deaths 39,101 people affected USD 39 million in damages
Mick	14/12/2009	4 deaths 3.845 people affected FJD 26 million in damages
Gene	28/1/2008	7 deaths
Daman	5/12/2007	69 people affected USD 0.7 million in damages
Cliff	5/4/2007	1 death Landslides and mudslides associated
Vaianu	11/2/2006	Unlisted
Jim	29/1/2006	168 people affected
	8/4/2004	16 deaths 5,000 people affected USD 4 million in damages
Ami	14/1/2003	17 deaths 30,000 people affected USD 30 million in damages
Paula	1/2/2001	1 death 7,000 people affected
Iris	7/1/2000	Unlisted
Dani	19/1/1999	9 deaths 1,772 people affected USD 3.5 million in damages
Cora	23/12/1998	Unlisted
Susan	3/1/1998	Unlisted

Hina	12/3/1997	Unlisted
Gavin	10/3/1997	25 deaths 3,500 people affected USD 27 million in damages
June	1996	Unlisted
Tomas	20/3/1994	Unlisted
Thomas	1/3/1994	Unlisted
Kina	2/1/1993	21 deaths 160,003 people affected USD 100 million in damages
Joni	11/12/1992	1 death 2,000 people affected USD 1.6 million in damages
Fran	5/3/1992	Unlisted
Sina	28/11/1990	6,000 people affected USD 10 million in damages
	1/1/1987	1 death 3,369 people affected USD 25 million in damages
Rajah	28/12/86	1 death 3,000 people affected USD 20 million in damages
Martin	10/4/1986	Unlisted
Hina	11/3/1985	Unlisted
	7/3/85	1 death 20,000 people affected USD 3 million in damages
Gavin	5/3/85	3 deaths 2,000 people affected
Eric, Nigel, Odette	17/1/85 - 19/1/85	28 deaths 100,000 people affected USD 73 million in damages
Sarah	25/3/83	11,132 people affected USD 1 million in damages
Oscar	1/3/83	9 deaths 200,014 people affected USD 50 million in damages
Hettie	24/1/1983	Unlisted
Arthur	15/1/81	4,700 people affected
Wally	24/3/80	18 deaths 35,250 people affected USD 2 million in damages
Peni	2/1/80	Unlisted

Natural disasters in Tonga

Similarly to Fiji, Tonga is located within the Pacific cyclone belt and the Ring of Fire, and is ranked second in the UN's 2011 World Risk Report with a score of 29% (UNU, 2011). Major events can be catastrophic in this small country. During a typical disaster year, over 40% of the population is affected, and losses average about 14% of GDP (Weir and Virani, 2010). Tonga has an average of one tropical cyclone per year (Jayavanth et al., 2009). Since the 1960s there have been five severe cyclones - Cyclone Flora in March 1961 affecting Vava'u and Ha'apai, Cyclone Isaac in March 1982 affecting Ha'apai and Tongatapu, Cyclone Waka in December 2001 in Niua, and Cyclone Rene in 2010 in Tongatapu, Vava'u and Ha'apai (MECC and NEMO Tonga, 2010), and Cyclone Ian in 2014 in Ha'apai.

Isaac destroyed 20% of all housing in Tonga, 90% of banana crops and all the breadfruit crops (UNCTAD Secretariat and UNDRO, 1983). Isaac however, was eclipsed by Ian, which made landfall across Ha'apai on 11 January 2014 as a Category 5 cyclone, and left two people dead and an estimated two-thirds of all buildings in Ha'apai destroyed or severely damaged, with losses totalling around USD49.5 million or 11% of gross domestic product (World Bank, 2014). Even the largest island, Tongatapu, is small and flat enough that the sea spray can be felt across the entire island, so there is literally nowhere inland to evacuate to when a cyclone is approaching.

Table 1.3 below lists the recorded cyclones that have occurred in Tonga from 1980- June 2014, using combined data from EM-DAT, the Pacific Disaster Net plus the Fiji Meteorological Service (cited in Terry, 2007). The date may be an approximation in some instances when the cyclone lasted for several days and the date of impact with Tonga is unclear.

Table 1.3: Tropical cyclones in Tonga, 1980-June 2014

Named Tropical Cyclone (category)	Date	Effects
Kofi	1/3/14	Unlisted
Ian (5)	6-13 Jan 2014	1 death 14 injured 4,000 people affected USD48-50 million in damages
Wilma	26/1/2011	USD3 million in damages
Rene	16/2/2010	Unlisted
Lin	5/4/2009	Unlisted
Vaianu	11/2/2006	Unlisted
Heta	6/1/2004	1200 people affected TOP950,000 in damages
Eseta	11/3/2004	15,000 people affected TOP1.9 million in damages
Ami	12/1/2003	Unlisted
Waka	31/12/2001	16,500 people affected USD 51,300 in damages
Paula	26/2/2001	Unlisted
Mona	8/3/2000	65,000 people affected TOP4.2 million in damages
Iris	7/10/2000	Unlisted
Cora	26/12/1998	77,000 people affected TOP19.6 million
Ron	7/1/1998	500 people affected USD1 million in damages
Keli	7/6/1997	Unlisted
Hina	16/3/1997	3,000 people affected USD15.2 million in damages
Yasi	1/1996	Unlisted
Kina	1/1/1993	Unlisted
Nina	29/12/1992	Unlisted
Joni	5/12/1992	Unlisted
Sina	24/11/1990	USD18.5 million in damages
Ofa	4/2/1990	1 death 3,103 people affected USD2.5 million in damages
Martin	10/4/1986	Unlisted
Eric	14/1/1985	Unlisted
	30/5/1982	1 death USD1.1 million in damages

Isaac	3/3/1982	6 deaths 146,512 people affected USD21.2 million in damages
Cliff	8/2/1981	Unlisted
Tia	3/1980	4 deaths 5,000 people affected

1.3 Policy responses and regional frameworks

There are many similarities and consistencies between the disaster risk management (DRM) and climate change adaptation (CCA) fields that make the convergence of them logical. Both recognise the importance of poverty reduction, sustainable resource management and livelihood security; both are linked with development processes; and both use risk, vulnerability and resilience approaches (Lei and Wang, 2014; Thomalla, Downing, Spanger-Siegfried et al., 2006). The potential benefits of closer integration of the sectors have been recognised by the Intergovernmental Panel on Climate Change in their Special Report on extreme events and disasters (IPCC, 2012). Historically though, there have been some key differences that have separated these fields. Disasters tend to be thought of as short term, and local or national in scale; whereas climate change is more global and long term (Birkmann and Teichman, 2010; Schipper and Pelling, 2006).

To link them successfully requires the adoption of a cross-sectoral, multi-scale integrative approach, with flexible funding schemes shifting from short-term project-oriented financing towards long-term sustainability, and the viewing of disasters as ‘windows of opportunity’ to allow for change and process with a longer-term perspective (Birkmann and Teichman, 2010). Disasters attract media and policy attention, but typically that is translated into immediate humanitarian response rather than acting as a catalyst for positive change (Schipper and Pelling, 2006).

Increasing the focus on risk reduction and prevention rather than response to disasters, and recognition of the local and national nature of much climate change adaptation helps to bring the sectors closer together and pave the way for joint action. The local and bottom-up approaches often seen in the disaster risk management field may enable the promotion of early adaptation strategies, while the top-down elements common to climate change adaptation may promote systemic change (Lei and Wang, 2014).

There is growing recognition in the policy world of these connections between climate change and natural disasters. The United Nations' *Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters* outlines priorities for action in reducing risk, strengthening preparation and building resilience. The responses of the South Pacific countries to the Hyogo Framework and their commitments to it are clearly seen in the region's *Pacific Island Framework for Action on Climate Change 2006-2015* (PIFACC), co-ordinated by the Secretariat of the Pacific Regional Environmental Programme (SPREP). Tonga was the first country in the region to develop a *Joint National Action Plan on Climate Change Adaptation and Disaster Risk Management* (JNAP).

Particularly in a region such as the South Pacific, with its many small island developing states, the strength and importance of regional frameworks and agreements such as these is clear. The South Pacific is looking to formalise the relationships between disaster risk reduction and climate change adaptation through a joint framework:

> DRR and CCA are increasingly recognised as having a shared aim of reducing the vulnerability of communities and contributing to sustainable development by improving the ability to better anticipate, resist, prepare for, respond to and recover from the impacts of hazards (United Nations International Strategy for Disaster Reduction (UNISDR), 2013, p2).

Tonga has led the way in the South Pacific, officially bringing the fields together in a policy plan in 2010. The JNAP, as it is known, was developed to comply with the existing regional frameworks.

There are six priority goals (MECC and NEMO Tonga, 2010):

1. Improved good governance for climate change adaptation and disaster risk management;
2. Enhanced technical knowledge base, information, education and understanding of climate change adaptation and effective disaster risk management;
3. Analysis and assessments of vulnerability to climate change impacts and disaster risks;
4. Enhanced community preparedness and resilience to impacts of all disasters;
5. Technically reliable, economically affordable and environmentally sound energy to support the sustainable development of the Kingdom;
6. Strong partnerships, cooperation and collaboration within government agencies and with civil society organisations (CSOs), non-government organisations (NGOs) and private sector.

The JNAP includes suggested adaptation measures against increased tropical cyclones and storm surges, including village preparedness plans and relocation to higher ground.

Tonga's JNAP is ambitious, being the first in the region. However, while the two sectors merged for the purposes of writing the JNAP, there are few explicit statements within the document about actually integrating the two systems on a continuing basis. The document does effectively bring together the CCA and DRM polices into one document, but not necessarily into one practice. The plan calls for joint meetings of the National Environment and Coordinating Committee and the National Emergency Management Committee once every six months, with the Chair to rotate. This does not imply full integration, but something closer to mutual consultation. It may be indicative

of power struggles between the two committees, with neither wanting to cede ground in a truly integrated set up.

Despite the existence of the JNAP in Tonga, the Committees responsible for CCA and DRM remain separated, along with their respective responsible Ministries. This was explained to me by the DRM side of the government as being a deliberate decision for largely logistical reasons; to ensure that DRM remains in the same Ministry as the emergency services and resources required during disaster responses. However, the CCA side of government sees more value in combining the two areas, especially for the purposes of funding application and project management.

Other countries in the region, including Fiji, are following suit, with JNAPs currently being drafted. The existing climate change policy in Fiji that was written to align with the existing regional climate change framework mentions disaster risk reduction (Government of the Republic of Fiji, 2012):

- Objective 1: Mainstreaming - Strategy 6 - ensure all sectors coordinate climate change adaptation and disaster risk reduction efforts to enhance aid effectiveness and streamline implementation;
- Objective 5: Adaptation - reduce the vulnerability and enhance the resilience of Fiji's communities to the impacts of climate change and disasters:
    - Strategy 1 - integrate related disaster risk reduction and climate change adaptation strategies and actions into national and sectoral planning to streamline responses;
    - Strategy 5 - support the ecosystem-based approach throughout Fiji, recognising that ecosystem services, such as food security, natural hazard mitigation and physical coastal buffer zones, increase resilience;
    - Strategy 8 - improve disaster response capacity and access to public health facilities, emergency services, communication services and evacuation centres;

- Strategy 12 - strengthen early warning systems to ensure effective and timely communication to the public, with particular attention paid to isolated, hazard-prone and disadvantaged areas;
- Strategy 14 - undertake national research to identify effective adaptation measures to support sector-specific adaptation and disaster risk reduction response.

In a report looking at the economics of climate change in the Pacific, the Asian Development Bank recommended a risk-based approach to DRM and CCA, to prioritise climate actions and increase cost-efficiency of adaptation measures, and for strong co-operation and co-ordination with regional partners in the Pacific and beyond (Asian Development Bank, 2013).

The Strategy for Disaster and Climate Resilient Development in the Pacific (SRDP), currently being drafted, will replace the Pacific Disaster Risk Reduction and Disaster Management Framework for Action (2005-2015) and Pacific Islands Framework for Action on Climate Change (2006-2015). Recognising the commonalities between these areas, the strategy will focus on capacity for implementation, identifying the transformations required to bring the previously separate sectors together. With goals, performance indicators and priority actions for national and local governments and administrations, civil society organisations, private sector organisations, regional organisations, other development partners, and communities, the strategy has a vision of: "Pacific people, their socio-economic development, and the region's natural resources and environments, are resilient to all hazards, and to the adverse consequences of climate change, variability and extremes" (UNISDR, 2014, p15).

Within the February 2014 draft strategy, eight key opportunities for disaster and climate resilient development have been identified:

1. Move from the current focus on disaster response to sustainable development-centred disaster and climate risk management pathways;
2. Faith-based organisations can play even greater roles in advocacy and education for building more resilient societies;

3. Management of natural and other relevant hazards should have meaningful priority on political and economic agendas;
4. Efficiencies can be achieved through improved co-ordination, reducing duplication and taking advantage of synergies that arise when climate and disaster resilient development initiatives are jointly implemented;
5. Improved place-based understandings of how hazards, vulnerability and exposure interact with development processes is the cornerstone to effectively allocating and utilising resources that deliver more resilient development outcomes;
6. Refinement and increased use of the tools needed to make compelling economic cases for adopting proactive, systematic and integrated risk management measures;
7. Strengthened capacity to anticipate, resist, plan and prepare for, respond to and recover from the consequences of disasters and from climate variability, extremes and change;
8. Increased ability to manage new and emerging disaster and climate risks in an effective and efficient manner.

There are several positive signs from the drafting of this strategy. Firstly, while the draft is similar to the previous frameworks in its focus on risk (from the disaster framework), development (from the climate change framework), working in partnerships and political agendas, the emphasis on economic agendas and funding represents a departure from the previous frameworks, and recognition of the difficulties involved in having needs, political agendas and funding match up.

Secondly, the drafting of this strategy is in marked contrast to recent findings of the World Bank that while integration of disaster and climate change areas is happening on the ground, there is resistance at institutional levels both nationally and internationally (World Bank, 2013). This may be reflective of the history of small island developing states generally and the Pacific specifically, being particularly proactive in the area of climate change.

Finally, there is the issue of capacity. With the best of intentions highlighted in the enacting of frameworks and agreements such as these, there is often a gap between that and actual implementation (Barnett and Campbell, 2010). Sometimes progress gets as far as assessments and plans for action, but then stalls for a variety of reasons such as governance arrangements, lack of or self-interested leadership, competing planning agendas and lack of institutional co-ordination, insufficient financial and human capital, lack of information and data, and path dependency (future pathways being contingent upon historical pathways) (Wise, Fazey, Stafford Smith et al., 2014). The focus on capacity for implementation in the current draft of the SRDP is a positive and constructive recognition of this problem.

1.4 Conclusion

Cyclones are already a significant issue for the South Pacific countries, including Fiji and Tonga. They are located geographically in areas at high risk of a number of hazards, including cyclones, earthquakes and flooding. Being small island developing states, they are highly vulnerable to those hazards. This vulnerability will be discussed in more detail in chapter two. Climate change is likely to worsen the situation, with more hazards including stronger and longer lasting cyclones. In response to this, the Pacific is being proactive in bringing together the climate change adaptation and disaster risk management areas in their policies and regional frameworks. This integration is happening at least on paper, although putting this policy shift into practice is less straightforward, with many issues involved.

Chapter 2 - Key research themes and conceptual framework

This chapter discusses some of the issues involved in adapting to climate change in terms of disaster response, and outlines the conceptual framework and key research questions. These issues of adaptation centre around elements of resilience, relevant to both the disaster management system and the people. The practical responses of the disaster management system and the adaptive capacity of that system are intricately linked with the resilience of the communities. The links are investigated using certain elements of resilience - expectations, governance and remoteness. These themes are introduced, along with the key stakeholders of the communities, governments and aid organisations.

A conceptual framework is a system of concepts, assumptions, beliefs and theories that support and inform a study (Miles and Huberman, 1994). At its most basic level, it is an analytical tool to organise ideas, and provide a context for interpreting findings. It is a scaffold for the research, providing connections between theory, research design, fieldwork and significance of the results. The conceptual framework for this project is designed to show how expectations, dependence and remoteness interact for the communities, governments and aid organisations, influence each other at each stage of the disaster management cycle, and how in turn, this affects resilience and the adaptability of the systems, to a future of more severe extreme weather events.

2.1 Resilience and adaptive capacity

The disaster response system is going to have to adapt to the changes that are occurring, both in terms of the climate and hazards, and the policy responses. Critical to this, is the resilience and adaptive capacity of the system as it tries to make these adjustments. The IPCC defines adaptive capacity as "(t)he ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences" (IPCC 2014a, p. 2).

Socio-ecological resilience is the ability to absorb disturbance, reorganise, and retain essential functions, processes, structures and feedbacks (Walker and Salt, 2006; Holling, 1973). Resilient socio-ecological systems are characterised by having, among other things, in-depth local knowledge, flexible and polycentric governance, diversity, modularity, openness, reserves, feedbacks, monitoring, leadership and trust (Lauer, Albert, Aswani et al., 2013; Carpenter, Arrow, Barrett et al., 2012). In this way, the systems are able to adjust or exhibit resilience.

There are elements that are immediately important arising from this such as governance and the people involved. Other important elements of resilience and adaptive capacity particularly relevant to this context are identified through an understanding of the existing underlying vulnerabilities, historical responses and their impacts. This helps to find the starting point from which the adaptation needs to occur.

Vulnerability of the South Pacific region

Poverty and disasters work in a cycle, with disasters increasing poverty in developing countries such as Fiji, which in turn makes the disaster outcomes more severe (Lal et al., 2009). As a proportion of gross national product, climate hazards have been found to have 20-30 times the impact in poor as in wealthy countries (UNCTAD Secretariat and UNDRO, 1983). The predicted increase in intensity of tropical storms and depressions has been highlighted as the most critical danger from climate change for South Pacific nations as a decreased amount of time between events (return time) decreases the nations' ability to recover (Barnett and Campbell, 2010). The poverty in the South Pacific developing nations may require a pro-poor vulnerability analysis with the voices of local populations in their understanding of who is at risk, the problems at-risk groups face and possible solutions (Ribot, 2010).

As outlined in Section 1.1, the combined effects of climate change in this region are likely to mean more intense tropical cyclones, involving stronger winds, increased rain, more damaging storm surges and flooding resulting from increased sea-surface temperatures and sea-level rises. These more intense events will occur in a changing Pacific islands area.

The influence of western ideas has meant a shift away from traditional housing that was readily repaired and an increase in reconstruction timeframes. Houses on Pacific islands were traditionally constructed from natural materials found in the local environment. Westernised houses, using materials such as corrugated iron, timber or concrete have almost completely overtaken traditional housing. This means that damaged houses can no longer be repaired quickly from the surrounding environment, but require construction materials such as nails. Colonisation in many countries, and the move away from largely subsistence lifestyles have also changed inter-island relationships and led to a loss of traditional coping strategies. Increasing coastal habitation, increasing populations, and increasing urbanisation mean that the harms associated with climate change effects such as tropical cyclones, may be outside the traditional experience of these communities.

Traditional coping mechanisms and increasing aid

Exposure to extreme weather events is not new for the South Pacific, and there have been traditional strategies and mechanisms to cope and adapt. Such strategies in rural indigenous communities have included land use planning, building methods, food resilience, social resilience and environmental resilience responding to changes in the climate and environment (Mercer, Dominey-Howes, Kelman et al., 2007). Traditional coping strategies such as these have been found to help reduce vulnerability to natural disasters (Paul and Routray, 2010).

With colonisation and demographic changes from increasing populations however, some of this traditional knowledge has been lost and some strategies may be becoming increasingly unavailable (Mercer et al., 2007). Economic and political incentives have altered practices and changed the focus of decision making around such issues as the construction of housing, and location of villages. Inter-island trade traditionally fostered strong and supportive inter-island relationships, which were then called upon during disasters. These relationships have changed since colonisation, as inter-island trade has diminished in favour of broader international trade (Barnett, 2001).

One traditional method for coping during a natural disaster was internal migration, where people move within customary land boundaries either temporarily or permanently (Hugo, 2010). With increases in population, and as more and more of the land becomes at risk as climate change impacts are felt, the availability of this as a solution may diminish, while simultaneously also becoming more necessary.

South Pacific nations are relatively young populations and the presence of children in the household has been found to increase distress for adults during disasters (Ronan and Johnston, 2005). Would such an increase in distress enhance or diminish self-help and coping strategies during and after the events? In Bangladesh, instinctive survival strategies in keeping safe and securing belongings and intra-community co-operation have been found to improve coping after a cyclone (Alam and Collins, 2010). Human responses at individual, community and institutional levels may serve to mitigate or enhance the harms associated with the disaster. It is important to consider what strategies can be put in place at each of these levels to maximise the mitigation and minimise the enhancement of the harms.

There may also be a difference between knowledge of traditional practices, and the application of them, particularly in a changing climate. The efficacy of traditional coping strategies on small islands is likely to be substantially reduced in the future due to changes in the climate (IPCC, 2014c). The strategies and practices will need to adjust accordingly. The need for documenting traditional knowledge and integrating it with more scientific understandings has been recognised by both governments in the South Pacific and researchers in this field (Government of the Republic of Vanuatu, 2006; Mercer, Kelman, Taranis et al., 2010). The usage of traditional knowledge leads to practical strategies that are accepted by local cultures and are therefore more likely to be implemented and sustained (Hodgson, 2010). The ways in which this local knowledge combines with external knowledge and improvised responses in the Pacific have been noted (Lauer, 2012), highlighting the dynamic rather than static nature of local knowledge.

The documentation and use of traditional knowledge is specifically mentioned in some regional frameworks including the Pacific Islands Framework for Action on Climate Change (2006-2015) (SPREP, 2011) and the Hyogo Framework for Action on Disaster Risk Reduction (2005-2015) (UNISDR, 2005). The Pacific Disaster Risk Reduction and Disaster Management Framework for Action 2005-2015 lists as one of the expected outcomes by 2015 having traditional knowledge incorporated into effective disaster warnings, alongside technology (Applied Geoscience and Technology Division of the Secretariat of the Pacific Community (SOPAC), 2005).

The 2011 Fiji national report regarding progress against the Hyogo framework underscored difficulties in achieving goals such as this, noting the:

> …need to document and share traditional knowledge on early warning systems and disaster preparedness, and to look at the relevance and applicability of this to the changing hazard characteristics. Preserving and transferring local knowledge from older to younger generations is a major challenge (National Disaster Management Office (NDMO) Fiji, 2011, p16).

Over the last 40-50 years, the receipt of international disaster aid has added significant complications. While vital at the time of a disaster, in the long term, it may provide perverse incentives to the island-nation governments, especially when the aid has no conditions attached regarding risk minimisation and adaptation measures. It has been found that South Pacific communities are increasingly relying on aid in the aftermath of disasters (Mercer et al., 2007; Benson, 1997), and that this culture of dependence may be constraining their own responses (Mercer et al., 2007). However, the arrival of aid may not necessarily be directly related to the severity of the disaster, with aid organisations clustering in particular locations for reasons such as logistics and finances (Koch, Dreher, Nunnenkamp et al., 2009).

Aid organisations will sometimes be constrained in their response by conditions placed on their funding for certain events or projects. The amount of aid varies from disaster to disaster, not in proportion to the number of people affected or the amount of damage (Ferris and Petz, 2011). With aid also comes

issues of equitable and timely distribution, and it has been shown to foster conflict where corruption and preferential treatment are perceived (de Silva, 2009).

The methods and systems used for distribution and allocation of aid are important in issues of equity, timeliness and fairness. It has been suggested that in Fiji, there is scope for better targeting of natural disaster relief through the existing informal village institutions (Takasaki, 2011). In a study examining aid distribution during the 12 months following a cyclone in Fiji, differences in the equitable distribution and sharing of scarce food aid resources, according to whether the leaders involved were traditional (hereditary and related to the clan structure) or non-traditional leaders (community group leaders and *turaga ni koro* - government 'gatekeepers' or liaison agents). Traditional leaders were found to be more likely to share aid than non-traditional leaders whose status was not related to kin/clan (Takasaki, 2011).

The allocation and distribution of aid is complex, particularly in this region of small islands. There are questions around the extent to which aid is distributed fairly and equitably (as alluded to above). However, there are also higher-level questions concerning the 'what' and 'when' of aid, and whose needs are being met through its provision. Does the aid address the post-disaster needs and concerns of the affected communities for food, shelter and livelihood? Or does it more adequately address the concerns of the aid organisations or the government to be seen to be delivering aid - and quickly? These issues are likely to be complex, without easy answers.

The difference between aid for disaster response and aid for disaster prevention is important here. Disaster response aid is short-term, with immediate benefits to the recipients and providers, and clear justification for the donors. Disaster prevention aid and strategies are closely linked with climate change adaptation strategies (see section 1.3), and by nature longer term, with less immediate benefits to the recipients and providers, and a more difficult cost-benefit analysis for donors. Competing priorities are much more likely to win over risk reduction and prevention work which may be seen as optional, when compared to humanitarian response in the face of images of disaster gaining the attention of international media.

Temporary dislocation and permanent resettlement or migration

Following a major sudden-onset natural disaster, there will be people who are displaced and need to be relocated whilst repairs and rebuilding are underway in their villages. Often the only roads and major transport routes on islands are along the coast, and these are likely to be damaged. Crop damage may mean not only a reliance on emergency food stocks or aid, but decreased food production for months or even years. The salinisation of water supplies through storm surges and flooding may lead to problems with fresh water supply. Damage to buildings, such as churches and schools, will disrupt the functioning of communities even for those whose homes are intact. Currently there exists little data on the numbers or situations of those people who have been displaced by natural disasters and their human rights concerns (Takasaki, 2011). In one of the first attempts to quantify the problem, it was estimated that 20 million people worldwide were displaced by sudden-onset climate related disasters during 2008 (Kalin, 2010). A 2011 Conference on Internally Displaced People and Climate Change in the South Pacific called for this data gap to be filled, with systematic collection of data and sustained monitoring of situations of internal displacement and recovery, as well as knowledge on who is displaced or at risk of displacement, and their likely needs for assistance and protection.

Both quantitative and qualitative research has been called for, with country specific data considering regional and national contexts of demographics and vulnerabilities (Yonetani, 2011):

- quantitative research to establish a baseline of information to test and analyse global patterns and trends in displacement over a longer time;
- qualitative research to understand the evolution of displacement situations over time, specific protection issues and needs of disaster-displaced people, barriers to their achievement of durable solutions to their displacement.

After a disaster, people have the right to expect access to or be provided with essential food and water, basic shelter and housing, and appropriate clothing (Mutter and Barnard, 2010). Where displacement continues into the medium to long term though, this becomes more difficult. Policies and guidelines for displaced people have been developed by the United Nations - Guiding

Principles on Internal Displacement, Framework for Durable Solutions, and Operational Guidelines on the Protection of Persons in Situations of Natural Disasters (Mutter and Barnard, 2010). However, it is not clear what difference, if any, these will make for the affected communities at the time. The translation of policies and guidelines into practice is not straightforward. Particularly for people in remote communities - to what extent their reality reflects such principles, while beyond the scope of this project, is an area for investigation.

Where people are displaced as a result of a natural disaster, there can be flow on effects for communities outside the immediate area. For example, a community in North Queensland, in Australia, where flooding is an annual occurrence, reported tensions arising between the community evacuated and the 'host' community that finds itself with a large group of people camped on the local sporting oval for weeks at a time. The host community blamed the evacuees for any negative event, and the evacuees found their usual capacity for resilience impeded by being away from home (Cottrell, 2008). These tensions sow the seeds of conflict between the communities.

Not everyone from an affected community will return - for some the outcome may be migration. One mechanism for coping with increasing disasters and climate change may be migration as an adaptation strategy. Empirical studies on how perceptions of climate change have influenced migration decisions made by individuals, households and communities have been identified as an area where current knowledge is lacking (Boncour and Burson, 2010).

Typically in the South Pacific, community relocation is over short distances, and as distance increases, and boundaries (both of land tenure as well as international borders) are crossed, the costs and problems associated with the relocation increase (Campbell, Goldsmith and Koshy, 2005). Migration may help reduce population pressures on diminishing resources, and to provide remittances to those who stay behind (Campbell, 2010). However, it has also been recognised that those who will be able to choose to cross international borders will be the well off, and that those who are left behind will be the most vulnerable (Barnett and Chamberlain, 2010).

Raleigh and Jordan (2010) have called for research on varying thresholds (points at which everyone is affected by a disaster, regardless of their initial situation), the long- and short-term actions of people from a region that is past its threshold, and the socioeconomic conditions that influence thresholds. This would provide an indication of the adaptive capacity of individuals and communities with respect to migration as an adaptation strategy.

Conceptual framework

The elements affecting resilience and adaptive capacity that contribute to the conceptual framework for this study are outlined in Figure 2.1 below. The key stakeholder groups are the communities, aid organisations and governments. The interactions and integration of these groups affects and is affected by expectations of aid, governance of the system and issues of remoteness. These then impact at each stage of the disaster management cycle - the hazard (becoming a disaster or not), the response, recovery, mitigation or prevention and preparedness for the next hazard.

Figure 2.1: Elements affecting resilience and adaptive capacity of the disaster response system

These elements and the ways they fit together will be discussed in detail in the remaining sections of this chapter.

2.2 Stakeholders and relationships

There are three key groups of participants in each country:

- communities - a remote outer island was identified that had multiple experiences with cyclones, including recent experience, and the community level participants were members of that community in each country;
- aid organisations - local, national and regional/international civil society and other non-government organisations such as faith-based organisations, involved in both the funding and delivery of disaster aid and climate change adaptation, including international donors;
- governments - representatives from government departments involved in disaster response and climate change adaptation, including from the local government of the region in which the islands are located, and national governments.

The research seeks to understand the interactions and alignment between the perspectives of these three groups, and the extent to which this will facilitate adaptation of disaster response to climate change. The groups are integrated and interlinked, as shown in Figure 2.2, rather than being completely separate groups operating in isolation and without impact upon each other. The nature of collaborations, and areas of convergence and contrast are a focus.

Figure 2.2: Key stakeholders and participant groups

The extent to which organisations and agencies are able to operate in atypical environments with demands exceeding their usual capacities, is an essential predictor of resilience, or the capacity of a society to recover, in this instance from a disaster (Paton and Gow, 2008). A crucial element of this is that the agencies and organisations are in both circumstances and relationships that are unfamiliar, sudden and urgent. Representatives from the three groups must quickly develop relationships that are co-operative and constructive. Aid in these times must complement existing methods and structures (Cottrell, 2008).

Social responses and issues of gender and faith

Central to the interactions of government and aid organisations with society, will be the social responses to the disaster. Previous research has found that national policies have little or no influence over how decisions are made about the environment in rural Pacific islands, with tradition more likely to determine how problems are brought to the community's attention, how they are discussed and by whom, and how solutions are identified and implemented (Nunn, Aalbersberg, Lala et al., 2014; Nunn, 2007b). Thus it is essential to understand the interactions between both formal policy and informal policy and human responses in the context of disaster response and recovery. Disaster risk reduction plans and activities can attempt to anticipate and mitigate the effects through such means as 'cyclone-proof' building techniques and evacuation plans and centres. However, no matter what strategies are put in place prior to an event, the social responses at the time will be vital in determining the outcomes.

Evacuation plans and centres are only helpful if people use them - if they have the information available, make the decision at the right time, and are physically able to put the plan into action. Rescue, recovery and aid efforts require co-ordination, co-operation and equity. The determination of priorities and distribution of aid, the nexus between self-help and reliance on others, and the human element in both the giving and receiving of aid are crucial factors in the aftermath of a disaster.

The acknowledgement of and respect for local traditions and understandings, combined with relationships between the community and local, state and national bodies were found to be essential to the success of evacuating a remote island community in northern Australia from Cyclone Monica in April 2006 (Veland, Howitt and Dominey-Howes, 2010). When formal systems do not meet expectations, it increases a sense of helplessness, disappointment, resentment and anger (Citraningtyas, 2010). The extent to which formal systems and policies are visible and relevant to the affected populations throughout the country is important, and similarly, the extent to which agencies feel able to reach across sectors and governmental levels to the communities.

Gender[3]

[3] This section was published in another form as Heckenberg, D and Johnston, I (2012) Climate change, gender and natural disasters: Social differences and environment-related victimisation. In R. White (Ed.) Climate change from a criminological perspective. Routledge Press: London.

Faith

Faith represents another aspect of the diversity of the community, and plays an important role in the Pacific. Religion has been defined as "a system of symbols which acts to establish powerful, pervasive and long-lasting moods and motivations in men by formulating conceptions of a general order of existence and clothing these conceptions with such an aura of factuality that the moods and motivations seem uniquely realistic" (Geertz, 1993, p90). While the literature on religion, climate change and disasters is not well developed, there are logical connections between them. Specifically, there are multiple references to disasters in religion, including reference to the religious duty to help those in need; while religious communities often attribute disasters to

God's will, and faith-based organisations (FBOs) are increasingly involved in relief operations (Kemkens, 2013).

At both global and national levels, mitigation and adaptation action on climate change has been frustrated by unresolved political debate. Engaging with religion in the climate change debate makes sense given that new sources of motivation are needed to break political deadlocks, and consumerist worldviews, incongruent with many religions, are barriers to adaptation (Haluza-DeLay, 2014). As the emphasis of disaster studies moves from the physical trigger event to the vulnerability and social constructs, an increased emphasis on the role of religion fits (Chester and Duncan, 2010). Religion can serve many functions after a disaster, including assisting with psycho-social recovery, providing meaning for how to interpret the event, a social support network and a sense of control (Kemkens, 2013).

Belief in divine will, however, is said to be a barrier to climate change adaptation in the Pacific (Nunn et al., 2014; Lata and Nunn, 2011), and so-called 'political-religious disaster opportunism' may exist, whereby governments take advantage of belief in divine will to deflect their own responsibility for vulnerabilities within their communities (Kemkens, 2013). God's covenant with Noah never to flood the earth again has been cited as justification for not believing in dangerous sea level rise (Mortreux and Barnett, 2009).

This issue has been directly addressed by the Pacific Council of Churches in their 2004 Otin Taai declaration statement and recommendations from consultations on climate change:

> The sea level is rising and threatening Pacific Islands with flooding from high tides and storm surges. This is not an act of God. It is a result of human economic and consumer activities that pollute the atmosphere and lead to climate change. Most of these polluting emissions come from highly-industrialized counties. Our response to God's covenant with Noah should be to act in love toward God's creation and to reduce the pollution that is contributing to

> climate change. By placing us on the earth, God has given us both the right to use it and the responsibility to do so with care (Pacific Council of Churches, 2004).

The cultural context may be important, with fatalistic attitudes sometimes representing a positive coping mechanism, allowing people to move on (Gaillard and Texier, 2010). Parallel practices, which may at first seem inconsistent, coexist in many non-western parts of the world, such that religious practice is just one of many protective behaviours (Chester and Duncan, 2010). The idea of disasters being God's retribution or punishment for sinfulness is losing prominence. The focus may shift to structural or societal rather than individual sinfulness, linking back to unequal distribution of power, wealth and vulnerabilities (Chester and Duncan, 2010).

Both Fiji and Tonga are predominately Christian countries, and many of the civil society organisations (CSOs) represented there are church-based. Churches are very well connected with communities throughout the countries, and this existing structure represents one of the best methods of communicating with villagers, especially in rural and remote locations (UNISDR, 2014; Nunn, 2007b). Governments have recognised that the churches and FBOs have community connections that are more comprehensive than their own (Thornton, Sakai and Hassall, 2012). This, along with the high levels of trust for churches among communities (Gaillard and Texier, 2010) is an advantage also for FBOs in terms of aid projects.

Potential disadvantages include operating outside the conditions of humanitarian principles of neutrality and impartiality, with preferential treatment; humanitarianism being used as a cover for missionary activities; and limitations to professionalism where aid is not part of the core business of the organisation (Kemkens, 2013).

2.3 Contexts and interactions

The elements of governance, expectations and remoteness interact with the participant groups discussed above, and with each other in affecting resilience and adaptive capacity of the disaster response system. Each of the elements interacts with the other two elements in a dynamic way, affecting resilience

and adaptive capacity. Similar to the participant groups, these elements are interlinked as shown in Figure 2.3, with both areas of convergence and contrast of interest in this study.

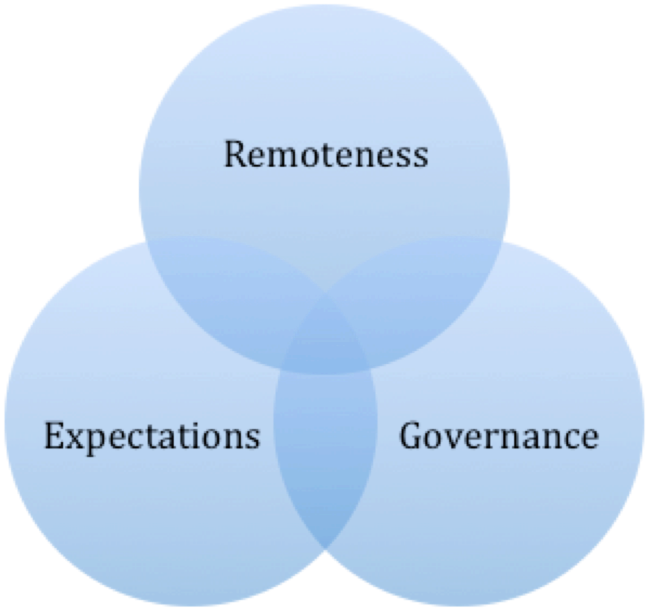

Figure 2.3: Contexts and interactions affecting the disaster management cycle

Governance

As the implications of the projections for climate change start to take shape, there is increasing interest in the links between climate change, sustainable development and disaster risk management. Disaster risk governance is the "way in which the public authorities, civil servants, media, private sector, and civil society coordinate at community, national and regional levels in order to manage and reduce disaster risk and climate related risks" (United Nations Development Programme (UNDP), 2013, p1).

Earth Systems Governance (ESG) combines the areas of governance and earth systems analysis in examining the integrated formal and informal systems at all levels of society, that are designed to cope with environmental change and 'earth system transformation', within the context of sustainable development (Biermann, Betsill, Gupta et al., 2010). The inclusion of multiple levels and systems echoes Ostrom's notion that multi-level, polycentric governance systems involving the capacity to initiate or veto action at multiple scales are most appropriate for adaptation and resilience of socio-ecological

systems (Ostrom and Janssen, 2004). This allows for changes to occur at many places and levels within the systems, rather than a rigid system that can only be changed at certain inflexible points.

One of the analytical problems on which ESG concentrates is that of adaptation of the governance mechanisms and processes. This field of work includes such questions as the politics of adaptiveness - who benefits and why, which governance processes foster adaptiveness and what attributes of governance systems enhance the capacity to adapt (Biermann et al., 2010). Adaptive governance involves collaboration, social learning, flexibility, polycentrism and subsidiarity (Wyborn and Dovers, 2014). During times of rapid change it connects individuals, organisations, agencies and institutions at multiple organisational levels (Folke, Hahn, Olsson et al., 2005).

It remains to be seen what form these changes will take, with continuing uncertainty around the severity and timing of many climate change impacts, and future vulnerability, exposure and responses of interlinked human and natural systems (IPCC, 2014a). However, uncertainty exists in planning for any future, with only the degree of uncertainty changing (Barnett, 2001), and not all uncertainty is equally problematic (Stafford Smith, Horrocks, Harvey et al., 2011). How the uncertainty is recognised and dealt with in the adaptation will be important.

This project fits well within this area of ESG work, examining the adaptive capacity of disaster response systems in Fiji and Tonga. The perspectives of different levels of society are included, and the integration of formal and informal systems examined. The project questions to what extent formal government policies are represented within the reality of the informal on-the-ground responses, and vice-versa. Informal responses are often enacted well before the formal responses are felt, especially in rural or remote areas. In examining the need for and capacity of the systems to adapt, this project looks at the integration of these formal and informal systems, and of the views of future need.

These ideas are put into a context directly relevant to this project in a model of disaster management. It suggests that there are nested and increasingly

complex levels of organisation - from the individual and family, community, state, through to the global level. The interactions of these levels determine disaster risk management outcomes: 1) planning, 2) preparedness, 3) response and 4) recovery, with each of these occurring in parallel at each level of the model (Beaton, Bridges, Salazar et al., 2008). Analysis of these interactions is fundamental in this project, through the inclusion of the government, aid organisation and community levels of participation. It is the interactions of these levels that influence the integration of the formal and informal systems.

Expectations

Drawing on role theory (Katz and Kahn, 1978), overlaying the analysis of these interactions is the concept of expectation. According to this theory, roles are behavioural expectations that are associated with status and its accompanying rights and duties, within a larger social structure. Expectations are beliefs about the future, and are influenced by informal and formal rules (Chamlee-Wright and Storr, 2010; Ostrom, 2005). These expectations include beliefs and attitudes and in turn, drive behaviour. Where expectations are unclear or conflicting, interpersonal conflict and distress are likely.

In this project, it is the expectations and behaviours of the community, aid organisations and governments around disaster response, and the interactions between them, which are in question. Where there is ambiguity or conflict within these expectations and behaviours, less effective and adaptable responses are likely. The status, rights and duties of each may differ according to whether it is the formal or informal systems at play, leading to changes in expectations. The integration and alignment of these systems and the accompanying behavioural expectations will be analysed in the context of the adaptive capacity of disaster response systems. The need and capacity for adaptation of the informal and formal systems may differ, and such adaptations may then increase or decrease the integration of the systems, according to the expectations of the various participants. The foundations for either enhanced and more effective responses, or ineffective responses and increased conflict, are then in place.

Bringing the idea of expectations into the context of disaster management, the role that community expectations of government response plays in shaping that community's own actions following a disaster, has been developed into typologies of expectations (Chamlee-Wright and Storr, 2010). In this model, the community expectations affect their behaviour, regardless of how realistic they are. The typologies identified are divided into optimistic and pessimistic, relating to the community's view of the government's capabilities and intentions, and then link in to behaviour according to the expectations of whether the government is going to help and what the outcome of that is likely to be.

One element that may be added to this is what the expectations are of what type of assistance is likely to be provided. This will to some extent moderate the translation of expectations into behaviour. For example, if the assistance you are expecting the government will be able to provide is a tent, this will lead to different behaviour than if the likely outcome is the money to replace your home. This links into the idea of disaster response as meeting needs.

Smart (2012) suggested that there are four elements of disaster management - reduce vulnerability and build resilience by mitigating known risks; planning response and ensuring sufficient capabilities are in place; respond effectively by providing basic human needs; and recovery from disasters including building resilience against future disasters. Given the emphasis in the response on the provision of basic human needs, what follows then, may be the question of what 'basic human needs' are exactly. The easy initial answer would perhaps be that from a humanitarian perspective, which is the relevant perspective in disaster response, basic human needs are food, shelter and clothing. However, looking at the question from the perspective of Maslow's theory of motivation provides a more complex viewpoint.

Maslow defines 'basic human needs' more broadly and includes elements far beyond food, shelter and clothing (Maslow, 1943). According to Maslow's theory, basic human needs are categorised as physiological, safety, love or belonging, esteem, and self-actualisation. These needs are hierarchical and decreasing in pre-potency, such that physiological needs must be satisfied before safety needs can be considered and so forth. Once one need is satisfied,

it opens the way for the next level of needs to emerge into importance. This hierarchy should be understood in the context that behaviour is seen as having multiple motivations and determinants, so that the hierarchy is about unconscious needs, rather than conscious superficial needs, wants or behaviours. Importantly, the hierarchy is not rigid, such that it is possible for higher levels to be accessed before some lower levels have been met, and that there may be degrees of relative satisfaction, decreasing as you go up the hierarchy (Maslow, 1943).

While there has been much discussion and controversy around Maslow's theory in the years since it emerged, there has been no conclusion reached as yet (Wahba and Bridwell, 1976), and the theory is still widely used and discussed today (e.g.Walsh, 2011; Koltko-Rivera, 2006). The context for the theory, as outlined in the original 1943 paper, with the hierarchy relating to unconscious motivations, and being flexible with degrees of relative satisfaction, makes the theory difficult to empirically test.

Using Maslow's hierarchy to look at quality of life, it has been suggested that more developed societies are more focussed on higher order needs (social, esteem and self-actualisation), while less developed societies are more focussed on lower order needs (biological and safety) (Sirgy, 1986). In the context of disaster response and the impacts of aid and expectations of aid on community preparation and resilience, it may be that in some situations, communities in less developed societies are shifting focus to higher order needs by the impact of the disaster aid industry. At the community rather than individual level, some are being raised to higher order needs without the lower order needs of everyone being fulfilled first. While in developed societies, this may be a question of some people for example receiving housing assistance from the government while others rely on their insurance (sufficient or not), in less developed societies, and especially in remote places, it is more likely to be about whether or not there is assistance of any kind. As climate change increases the frequency and intensity of disasters, this inequality will become untenable, and a way to return to the core humanitarian role of consistently fulfilling the lower order needs must be found.

Remoteness

Issues of governance, expectations and dependence in disaster management take on another layer of complexity in remote places. On the face of it, remoteness may seem a simple construct - somewhere that is far away. However, there are layers of complexity to remoteness that impact disaster risk management (DRM) and climate change adaptation (CCA). Remoteness at one level is a simple geographical idea, defining a community by its inaccessibility (being difficult to access or a long distance or both). However, this reflects an urban-centric deficit view of geographical remoteness (Stewart and Abbott-Chapman, 2011). But it is also cultural, and while the geography of a remote place often has negative connotations, the cultural aspects are often positive, such as self-sufficiency, self-reliance, independence and a strong sense of community (White, Wall and Kristjanson, 2004).

These ideas are put into the context of DRM and CCA by Kelman and Khan (2013) who describe islands being viewed as either isolated, fragile and vulnerable communities needing help; or as actively contributing and participating in DRM and CAA efforts globally. The geographical and cultural aspects of remoteness, referred to here as issues of 'islandness', are related to both vulnerability and resilience, and interact with other issues for small islands such as governance, interconnectedness, migration, alliances and knowledge forms (Kelman and Khan, 2013). Islands have huge diversity however, even though they are often thought of as a single category (Ronström, 2012). The concept of remoteness is taken further here by concentrating on remote islands within small island developing states. "Even in island countries, outer islands can suffer from remoteness to the power centre" (Kelman and Khan, 2013, p 1133).

Colonisation introduced a different idea of remoteness than when inter-island relationships were stronger, and the oceans were considered less of a barrier (Hau'ofa, 1994). Strong inter-island networks traditionally in the Pacific islands have served many purposes, including social, political, economic and environmental (Campbell, 2006). The weakening of these inter-island relationships primarily since colonisation, has impacted on disaster

management, since those connections are seen as less reliable in times of need. Disaster aid, relief and rehabilitation assistance have also been shown to weaken traditional disaster risk reduction techniques (Campbell, 2006), and a lack of maintenance of and trust in traditional knowledge may increase dependence on that aid (Kelman, Mercer and Gaillard, 2012).

2.4 Key research questions

Bringing together the key research themes, this thesis aims to investigate how disaster responses on remote islands in Fiji and Tonga need to and are able to adapt to a changing climate, and to identify:

- how tropical cyclones are presently responded to in Fiji and Tonga by remote communities, aid organisations and government and;
- how responses might need to change into the future as climate change intensifies these events, and combines with other climate change impacts such as rising sea levels.

Within these broad questions, arising from the key research themes and conceptual framework, are a number of specific research questions about how expectations, governance and remoteness impact on the responses of each of the participant groups, and on the other parts of the disaster management cycle. They are:

Do the social responses to these events help or hinder?

- the communities - self-help, expectations of aid, survival strategies and responses adopted, influence of gender and faith;
- the aid organisations - co-ordination with government, provision and distribution of aid, conditions placed on provision of aid;
- the governments at all levels- distribution of aid, disaster management procedures and policies.

Are the allocations of aid between disaster response and disaster prevention in the right proportions?

Sub-questions

What expectations do the communities, aid organisations and government have of themselves and of each other in terms of disaster management?

In what ways have 'development' and 'progress' in these countries helped or hindered responses?

How does remoteness impact on responses of the three groups?

How well-aligned are the perspectives of the communities, aid organisations and governments on the changes to the disaster response system needed to cope with future events?

Is migration or relocation a realistic option?

How is traditional knowledge used?

Some of these questions are more directly relevant to one participant group than others (for example traditional knowledge being highly relevant to remote communities). There are, however, interactions among both the participant groups and the research questions, given the breadth and complexity of this area.

2.5 Conclusion

This thesis as a whole looks at the resilience and adaptive capacity of the disaster response systems in Fiji and Tonga in the context of climate change, and the elements affecting that resilience and adaptive capacity. This chapter has outlined the key research themes and conceptual framework, from which arise the research questions. The underlying vulnerabilities of the countries as small island developing states at high risk of extreme weather events, and the increase in humanitarian aid following disasters, have changed the responses. Traditional strategies and responses have been weakened with colonisation and increasing aid. Climate change is solidifying the place of migration in the disaster management cycle in a new and urgent way.

The interactions, diversity and integration of the key stakeholders (communities, aid organisations and government), in this context are affected by elements of resilience - governance, expectations and remoteness. These, in turn impact upon each stage of the disaster management cycle, from immediate response, to longer-term recovery, prevention and preparation. These interactions of the key stakeholder groups and elements of resilience and adaptive capacity form the basis for the conceptual framework for the study, and the research questions.

Chapter 3 - The study

This chapter describes the research design, procedure, participants and methods of data analysis, choice of fieldwork sites and access to them, along with site descriptions. Moreover, in this chapter are sections on the qualitative experience of, and some necessary considerations for, doing cross-cultural research in the Pacific, and the impacts on my research of having my family accompany me to the islands for the fieldwork trips are discussed.

3.1 Research Considerations

This thesis started out as a segue from criminology to studies of climate change issues, by looking at the relationships between climate change and crime. This initial thought developed into a comparative study of two countries, and the climate change aspect focused on natural disasters. There is much literature detailing the criminological interest in disasters, with the post-disaster period often providing a context for opportunistic crimes against victims of the disasters. Safety in evacuation centres is an issue that arises in many parts of the world, and there are similarities between disaster evacuation centres and refugee camps (Ferris and Petz, 2011).

Thinking about these issues and reading about disaster studies led to an interest in the responses to disasters - both the immediate emergency phase, and the reconstruction phases. What happens six months later when the television cameras have gone, many of the aid organisations and volunteers have also packed up, and the world has at best a dim memory of the event having occurred? These issues are particularly pertinent for developing countries, compared to wealthy western countries where more resources are available to be deployed.

It quickly became clear that within the Asia-Pacific region, there is much research being done in South East Asian countries at high risk of natural disasters, probably because of their high populations. However, countries in the South Pacific, which are equally at risk, do not have the populations to sustain world attention. Tuvalu and Kiribati's attempts to focus the world's attention

on climate change as an issue relevant to today and requiring immediate attention, rather than being an almost hypothetical future issue are a case in point.

Within the South Pacific, Fiji is an obvious choice for a research project, since it is the regional centre and therefore many regional and international organisations are based there, including the United Nations. Tonga was then chosen as a comparison point for Fiji because of the similarities and differences highlighted in Section 1.2.

Once Fiji and Tonga were chosen as the countries of interest, there was a shift away from the criminological issues for two reasons. Firstly, in the literature crime did not seem to be as relevant in these countries as in some others in the world, a view that was backed up by consultations with Australian researchers working in the Pacific. Secondly, within the context of countries that are relatively peaceful and with low crime rates, I felt that it would be better to give the research a more positive approach. The focus moved more towards the impacts of climate change and how they would affect aid and emergency responses to disasters, specifically tropical cyclones, which are the most common 'natural disaster' event in both Fiji and Tonga.

The research questions narrowed in focus to the responses and coping mechanisms of the communities and countries involved. As the literature review continued, but prior to a scoping trip to Fiji and Tonga, the research questions began to take shape. With the importance of the social element of disasters, and the cyclical nature of disaster management, the main research questions began to centre around the various types of responses and to what extent those responses are helpful; the different roles of the various participants in the disaster response - the affected communities, the civil society organisations and the governments; and the temporal spectrum of responses from the immediate humanitarian through to the longer term resilience and prevention.

The concepts of actions and expectations began to recur through the above questions. The differences between the expectations one has of oneself and of others, and the actions which take place, have repercussions for everyone. The issues around self-help from the survivors of the event are intricately connected with their expectations of themselves and of aid. Differences in individual perceptions of the responses expected of them lead to differences in actions that may give rise to social tensions and conflicts. Where the responses of some individuals are perceptively different to the responses of others, the disjoint between the actions and expectations of self and others may be highly visible and contentious. The connections between the communities affected, and the governments and aid organisations providing emergency response, aid and assistance are complex and interdependent. The aid organisations and particularly the governments may be seen to have all the power in a disaster response situation, but without the cooperation of the communities, they will be hampered in their responses. This reality is reflected in the time and effort governments put into community education.

3.2 Research approach and fieldwork sites

This study seeks to understand how communities in Fiji and Tonga will cope with the potentially more intense tropical cyclones in a future changed climate, using a broadly ethnographic approach (Fife, 2005). This includes both macro level research such as records and policy reviews; and micro level research involving fieldwork with residential stays in field site communities and including interviews, focus groups, and participant observation. Data were collected during visits to Fiji and Tonga, including a three week 'scoping trip' in April 2012, a six week fieldwork trip to Fiji in June and July 2012, a six week fieldwork trip to Tonga in June and July 2013, and a feedback trip prior to completion of the thesis, in May and June 2014. This approach recognises the cross-cultural nature of this research, allowing a flexible process where the research evolves according to knowledge gained in the local context, and incorporating the needs and preferences of the broad range of research participants, thus being most likely to elicit honest information sharing from participants.

The sites for fieldwork were chosen in consultation with governments and aid organisations in-country. Once possible sites were identified, access to those villages was negotiated with the Village Chiefs. This process was essential in terms of obtaining the culturally appropriate permissions and authority for conducting research in villages. However, it inevitably involves the researcher being closely associated with whichever organisation (government or aid organisation) facilitates the access. It is therefore essential to disentangle from this association and establish the researcher's independence during the initial introductory phase of the fieldwork.

Given the nature of the research topic (responses to cyclones), the geographical location and remoteness of the fieldwork sites is also highly relevant since more remote locations receive less aid and assistance (Red Cross, personal communications, 2011). Thus the experience and expectations of aid and assistance from government and aid organisations will be different for villages on islands closer to the main islands. The fieldwork sites were specifically chosen because of their remoteness (as well as other factors such as experience of cyclones), with remoteness being a key analysis variable. However, it is recognised that this will impact on the generalisibility of the results.

3.3 Procedure

Data for this study came primarily from semi-structured interviews conducted during fieldwork in Fiji and Tonga, a review of official documents, as well as a literature review. Photos were also taken of both people and places, in order to illustrate some of the effects of the cyclones and their aftermath with recovery activities, as well as adaptation activities.

The project was subject to ethics approval by the Tasmanian Social Sciences Human Research Ethics Committee (Approval Number H0012313). The ethics approval covered the research methodology including fieldwork, interviews, focus groups and photos. During the course of the research, no incidents arose requiring modifications or amendments to that approval. Within both Fiji and Tonga, I was required to obtain a research permit, through the relevant application processes in these countries. Finally, approval was

required from traditional village Chiefs for access to the fieldwork sites that were villages on remote islands.

Scoping trip

A scoping trip to Fiji and Tonga was made during April 2012. There were several purposes to this trip:

1. Research permit application process
2. Identification of a suitable village location for the fieldwork
3. Identification of potential aid organisation and government interviewees
4. Gathering of information on issues relevant to Fiji and Tonga to contextualise the research.

This trip resulted in some fine-tuning of the research questions, and also saw the return of some criminological issues as being relevant to the research. Firstly, through consultations with the Fiji Meteorological Office, which contains the regional cyclone centre, and disaster management professionals, I was able to identify villages in both countries that had been affected by cyclones both early and late in the decade 2000-2010. This allowed for a comparison between two events within each village location as well as the inter-country comparison. This was an important advance to the methodology, as having time logistically to study only one village in each country was going to be very restrictive in terms of the generalisability and usefulness of the results.

Secondly, the contextual issues raised in each country were very similar, with the organisation of disaster response being the overwhelming problem for each. There are several layers of government, which while necessary given the geography of the countries with many sparsely populated islands spread over large distances, result in bureaucracies that can be difficult and lengthy to negotiate. There are also an increasing number of aid organisations involved in the disaster response, that need to be coordinated, especially in Fiji.

Another common theme was safety issues, especially in evacuation centres. These issues were raised once gender was spoken of as a sub-theme to the research. While there is little literature on this relating to these countries, and it

is culturally difficult to speak about, there are genuine and common safety concerns, especially for women and children, post-disaster in both Fiji and Tonga.

Fiji

Fieldwork in Fiji was conducted over seven weeks from June-August 2012. The first four weeks were spent on the island of Druadrua in the Northern Division, then one week in the capital of the Northern Division, Labasa, followed by two weeks in Fiji's capital city, Suva. The fieldwork was arranged in this order to allow the community interviews (with villagers) to be conducted first. While a semi-structured interview schedule was created for each group (community, aid organisations and government) prior to commencing fieldwork, interviews were free-flowing and responses to the interviews with villagers informed some of the questions to the aid organisations and government.

Druadrua island

The process of choosing Druadrua island was a collaborative one. The criteria for selecting a location included that it was a small, remote island community, with recent experience of cyclones - small enough to enable some level of integration within the four weeks available for that part of the research. The ideal population was about 200 so that it would be small enough for everyone to know everyone else, but large enough to provide a sample. Trust is an important issue in research, and especially in Pacific culture, and a small community provides the best chance of allowing a whole community to get to know a researcher and hopefully build up enough trust to tell their stories. The island had to be remote in terms of being far enough removed from the cities and major infrastructure for issues of self-reliance to be more relevant than for those communities on the mainland and closer to the cities. It was also desirable to find somewhere that was remote enough that it was not a particularly 'touristy' place, to minimise time spent overcoming preconceptions and assumptions about the purpose of being there.

The visit to the Fiji Meteorological Office during the scoping trip identified the Northern Division of Fiji as the place affected by cyclones most often during recent years. This dispelled the idea of the Western Division, particularly the Yasawa Islands and Kadavu Island as likely places. In fact, while heavily and regularly affected by cyclones in the past, the Western Division has not had many during the last 10-15 years. Consultations with government and aid organisations during the scoping trip then narrowed down the search to Druadrua or Mali islands in the Northern Division, as places that met the criteria and were each affected by both Cyclones Ami in 2003 and Tomas in 2010. Finally, the recommendations were taken to the National Disaster Management Office (NDMO), which helped to make the necessary arrangements and obtain the culturally appropriate permissions for the research to be conducted on Druadrua Island.

Druadrua Island is located off the coast of Vanua Levu, the second largest island in Fiji. Labasa is the largest city on Vanua Levu, and the capital of the Northern Division. Druadrua Island is a two-three hour bus ride along a potholed dirt road, and then a 20 minute boat ride from Labasa. There are two villages on the island, Salevukoso and Delaivadra, a 20 minute walk apart along a bush track. There are 53 households on the island, making a total population of about 200 people, but the population is difficult to precisely enumerate since it is fluid and mobile. High school children board on one of the main islands, so there are few teenagers around during term time, but friends and relatives visiting the island may stay for weeks or even months at a time.

Infrastructure and services are few. Once on the island, walking is the only form of transport - there are no roads. Electricity in the form of solar panels arrived on the island two weeks before I did. This is enough to power lights and mobile phone re-chargers, but little else. So diesel generators remain for the few villagers who own a television. The school master owned the only computer I saw on the island.

Druadrua was considered to be among the most severely affected locations in Fiji from Cyclone Ami in 2003. Because of this, most people live in ‘relief housing’, built after Cyclones Ami and Tomas. These houses are small, simple

wooden structures, some with a bathroom, some without. Cooking is over a fire, often outside in separate, outdoor kitchens. There is no hot water, and few landline telephones. Communication is improved now that most villagers have mobile phones, but it is still far from easy as there are few places on the island where reception is available. Some people choose to walk to the highest point in the village to sit on a rock where there is reception, while others have devised precise 'homes' for their phones where they may be used - sitting in that corner of their house, hanging from that branch on a particular tree, or on the purpose built 'phone table' near the beach. When a phone rings, the nearest person goes over to answer it and then calls the owner to come to the phone to speak. If you move the phone from its position, the reception will be lost. Just like cord phones, except in far less convenient locations. A new telecommunications tower being constructed on Vanua Levu is expected to improve mobile phone reception.

There is limited infrastructure on the island. The island has a primary school, which caters for children in pre-school or kindergarten until class eight. This is a boarding school and children from as young as class one come from the neighbouring island, Kavewa to board. The school is located in Salevukoso, and even children from the other village, Delaivadra, sometimes board rather than walking home along the bush track each day. There is one shop on the island, in Delaivadra, which stocks basic non-perishable goods. If you want to purchase something from the shop, you first need to locate the shopkeeper to open it for you.

There are three churches on the island - one in Delaivadra, and two in Salevukoso. Religious faith is very strong on the island, and church services are big, community events, with almost everyone involved.

The family I (along with my husband and two children) stayed with were part of the Chiefly family, and owned the largest house in the village of Salevukoso. The house was right on the beach, next to the Methodist Church. From there, the village spread up the hill, away from the beach, with the school and the Christian Mission Fellowship Church at the top.

Tonga

Fieldwork in Tonga was conducted over a seven week period during June-August 2013. The first four weeks were spent on the island of ‘Uiha, in the district of Ha’apai, in central Tonga, conducting interviews with community members. Following this, one week was then spent in Pangai, the capital of Ha’apai, with the final two weeks in the Tongan capital, Nuku’alofa. In both of these locations, interviews were conducted with representatives from government and aid organisations (including civil society organisations and faith based organisations).

‘Uiha island

The process for choosing the Tongan community research location began in parallel to identifying Druadrua in Fiji. During the scoping trip, the choices were narrowed down to the Ha’apai region, informed by both the Fijian Meteorological Office and government and aid organisation representatives in Tonga. Ha’apai was unanimously nominated as the region in Tonga most vulnerable to climate change and natural hazards, and it had experienced recent cyclones. The criteria for the specific island were the same as for choosing in Fiji. Since the Fijian fieldwork was conducted first (in 2012), the characteristics of Druadrua provided additional criteria as I wanted to find a Tongan island as similar in size, location and population as possible, to increase comparability. ‘Uiha island was the island most similar to Druadrau, of those in Ha’apai that were recommended to me as options. The biggest dissimilarities were in having a larger overall population for the island (about 550), and in having more connections with tourism, since yachts regularly stop at ‘Uiha island for the day. The Ministry of Environment and Climate Change, then assisted with obtaining the culturally appropriate permissions to conduct fieldwork on that island, and arranged accommodation. Unlike in Fiji though, the final step in receiving approval to conduct the research was not an official ceremony with the Village Chief. The village in Tonga that was chosen (Falemea) is a government-run rather than Chief-run village, so the formalities ended at local government level.

‘Uiha island is located about two hours by boat from Pangai. It has two villages, ‘Uiha villlage with a population of about 400, and Falemea village, which has about 130 residents. I chose to be based in Falemea village because its population was more similar to Salevukoso in Druadrua, and ‘Uiha village was larger than my original criterion of less than 200. The island has one primary school, located between the two villages, about a 10 minute walk from both.

Overall, there is more infrastructure on the island than in Druadrua. There are a number of *fale koloa* (small shops), diesel generated electricity for about six hours in the evenings plus Saturday mornings, and a wharf (although this had been destroyed in a cyclone and was unable to be easily re-built due to sea level rise). Most households had more ‘stuff’ than on Druadrua, with electrical appliances such as refrigerators, kettles and televisions being relatively common. There are roads on ‘Uiha island, with bicycle being the most common form of transport other than walking, and three motor vehicles on the island. Communication also has better infrastructure on ‘Uiha island than Druadrua island, with better (although definitely still patchy) mobile phone reception and landlines in many houses.

There are many cyclone relief houses on the island, with most having been built following Cyclone Isaac in 1982 that left only a few houses standing. There is less similarity among them than on Druadrua though, since not all were built by government, with churches and extended family assisting in the building of some.

There are about five different churches just in Falemea village, including Methodist, Free Tongan Church and the Church of Jesus Christ of Latter Day Saints (Mormons). The Mormon Church stands out with its modern, sturdy construction and surrounding fence. Many of the churches also have halls attached, and there was also a community hall in Falemea village (although it was destroyed in Cyclone Ian in January 2014).

My family and I stayed with an elderly couple whose adult son, although now living in Pangai, was heavily involved in the running of Falemea village, and represented on committees including the village disaster committee.

The house we stayed on was on the beach, about halfway along the long narrow village.

Feedback trip

In May-June 2014, I conducted a final research trip to the villages in both countries, with three nights on ‘Uiha island first, followed by four nights on Druadrua island. This was initially built into the research design as an opportunity to provide feedback to the communities on the progress and outcomes of the research. The importance of this was highlighted on Druadrua island in Fiji where during the fieldwork there were constant questions about when I would return. Subsequent to the fieldwork in Tonga however, the Ha’apai region was devastated by Cyclone Ian in January 2014, with ‘Uiha island in particular affected badly. This provided another reason to return to the island, four and a half months after the event, to observe the response and see how, if at all, people’s perceptions had changed.

3.4 Cross-cultural research: *Talanoa* in the Pacific[4]

This section has been removed for copyright or proprietary reasons.

[4] This section was published in another form as Johnston, I. (2013) Cross-cultural research: Talanoa in the Pacific. In Walters, M. Social Research Methods, 3rd edition, Oxford University Press, Melbourne.

3.5 Participants

There are three participant groups in this study, in each country - government, aid organisations and an affected community. The results from the three groups will be compared and contrasted, such that having the three groups becomes a form of triangulation for data validity within the countries, as well as between countries.

Fiji

Thirty three interviews were conducted in Fiji - 17 with villagers, five in Labasa and 11 in Suva, plus one focus group with villagers. There were 17 community interviews, three government and 13 civil society organisation, including two donor agencies. Government representatives responsible for disaster management were interviewed, however attempts to contact representatives responsible for climate change were unsuccessful. Community interviews included people from both villages in Druadrua. The interviews with government and aid organisations, as well as the focus group with villagers, included a task of creating a diagram of the current disaster response system in Fiji, and then how it should be changed into the future to cope with climate change. Other sources of data included policy documents, reports from government and aid organisations, and articles from newspapers.

Tonga

Thirty five interviews were conducted in Tonga - 16 with villagers, 13 with civil society organisations and six with government representatives, including both those responsible for disaster management, and for climate change. The government and aid organisation interviews also included the system diagram task used in Fiji.

My original intention on ‘Uiha island was to focus exclusively on Falemea village, because its population was large enough to draw a reasonable number of participants from, and ‘Uiha village was too large to be easily tackled in the time available. Partway through the data collection however, this changed. One of my opening questions in the community interviews was, “when was the most recent cyclone here”, and I had evidence from newspaper articles and government and aid organisations reports that ‘Uiha island had experienced cyclones in both 2011 (Wilma) and 2010 (Rene). However, in Falemea, most people insisted that the most recent cyclone was Isaac in 1982. After about a week, and finding this being a consistent although not exclusive response, I asked directly about the Wilma and Rene. It was then confirmed that yes, ‘Uiha island had been affected by those cyclones, but primarily with wave damage and only in ‘Uiha village itself. Due to the topography of the island and the

location of the two villages, the storm surge wave which came about 150m inland in ‘Uiha village was not felt in Falemea. Furthermore, villagers in Falemea were unable to provide any details of what happened in ‘Uiha village during those events. So while my research and preparation had correctly identified an island for study, I was in the wrong village.

My focus then turned to ‘Uiha village, however, I had only a couple of weeks left and although I had explored the village a little, I did not know anyone there, and with 400 residents I could not rely on simply having been noticed by way of introduction. To further complicate matters, ‘Uiha island is regularly visited as a stopover by tourists on yachts, who tend to anchor off shore, wander around the island for a couple of hours and then leave again. Many of these visitors are seen particularly in ‘Uiha village, because it is larger and has a shop clearly visible from the old wharf. So most people who saw me just assumed I was from a yacht. The interpreter who was assisting me in Falemea was not able to accompany me to ‘Uiha village, and so my host family arranged for some people to come to the house for me to interview. However, in order to interview enough people to obtain a range of views and demographics, I had to go to ‘Uiha village alone and try my luck, which felt like starting over. Without the assistance of an interpreter, the challenges were many.

3.6 Doing fieldwork in Fiji with your family

Embarking[5] on fieldwork in a country and culture that is foreign to you will always present challenges alongside the wonderful learning opportunities. Bringing your family along for the ride increases both sides of that equation.

Setting things up

My fieldwork during 2012, involved a one month stay in a village on a remote island in Fiji, followed by time in a regional centre and finally the capital, Suva. Organising this from my desk in Australia, was, to say the least, challenging. In today’s world of easy email communication, much can be

[5] This section was published in another form as - Johnston, Ingrid (2014) Let them feed him biscuits: Doing fieldwork in Fiji with your family. In review at *FQS: Forum Qualitative Research*.

achieved from afar. If my research was being conducted in a Western country, I probably could have organised the whole thing over email with a few phone calls. But not in this part of the world.

In Fiji, an email from someone they do not know may not mean very much, and I received few responses. Referrals from a mutual contact were more successful, but still only to a point. Fijians respond much more to meeting you in person. It is when you meet them you discover that the people of Fiji are very kind and generous, willing and eager to assist. Fijian contacts in Australia, and fellow researchers who had done fieldwork there recommended a scoping trip, and early on it became clear that despite budgetary constraints, they were right.

Negotiating Village Access

The timing of my scoping trip had been in some ways unfortunate. The topic of my research was natural disasters, and I had arrived just days after one. While an interesting time to be there, it did mean that several people I wanted to meet were simply unavailable. That included representatives from the government department responsible for disaster response. This was a problem since they were to be pivotal in the process of obtaining permission to stay in a village. There were however, other ways as well and I had been offered assistance, through an aid organisation and the Church, which is very strong throughout Fiji. This created a dilemma: accept the assistance of one of the less formal routes, or wait for the more formal government help? Fortunately for me, the government officials were very apologetic about being unable to meet me while I was in Suva, and were very attentive on both phone and email once I returned to Australia. However, in true Fiji style, they suggested waiting until two weeks before I left to begin the process of confirming and getting permission for the village stay. This Westerner was more than a little nervous about that plan!

Things were made more complicated (from my perspective) because I was taking my family with me on the fieldwork - my husband and two young children. In the words of one researcher with experience in doing just this:

> Anyone who teaches or does research in a remote place abroad knows well the scramble to secure the money, gear, travel documents, inoculations and official permissions that are vital for a productive trip. When scholars choose to bring their families along, the hassles can increase tenfold, but the rewards - both personal and professional - are usually vast (Troop, 2011).

I was concerned about where we would all stay, since I was purposely looking at villages without tourist infrastructure. To the Fijians this was a minor detail. I was having to start to let go of my Western ways and trust in their relaxed approach.

It was indeed two weeks before we left that the village was confirmed, and the process for gaining permission to stay there began in earnest. The baton was now passed to the Divisional (state/regional) level government officials to finalise arrangements. The two weeks passed very quickly, and we left Australia clear that the government knew which village we were going to, and when we were coming, but not sure whether or not the village actually knew, let alone where we were staying. Had it been just me on the trip, I would not have been overly concerned, but with children in tow, simply showing up and "improvising on lodging was a non-option" (Starrs, Starrs, Starrs et al., 2001). Ah, but not if your destination is a remote island in Fiji.

I had arranged our itinerary with maximising the use of time in mind, and therefore planned to arrive in the regional city closest to the island, and travel to the island the same day. A Fijian colleague in Australia advised me that everything would fall into place once I arrived in that regional city, and to allow a few days there. So we changed our plans to make sure there was time for the last minute arrangements to happen. How right she was - the village found out we were coming only when we arrived in that city, just a couple of days before we began our month long stay with them. With my western ways, I was convinced that the whole thing was going to fall apart. But this is how things are done in Fiji. All the Fijians had told me it would be okay, and not to worry. I just found it difficult to let go enough to believe them.

In the village

The location for the fieldwork ended up being a small, remote island in the north of Fiji. The island has only two villages, a 20 minute walk apart. There is no tourist infrastructure on the island, and we subsequently discovered that we were the first White family ever to stay there. An honour indeed. We arrived and were greeted by the Chiefly family in whose home we were staying for the next month. Despite finding out only two days before our arrival that we were coming, they opened their home and their hearts to us without any apparent hesitation, for which we will be forever grateful.

Talanoa Research

As a Westerner trying to engage in *talanoa* research (see section 3.4), it meant giving more time, and more of myself than I was used to from previous research endeavours. It was not unusual for interviews, both in the village and the cities, to take more than two hours. Two hours of talking, that is. Plus the waiting time. 'Fiji time' means that an interview scheduled with one person in the morning, may well take place with someone completely different, and in the afternoon. You become very good at waiting around and just taking it all in. The result was that even in the village where I was a maximum 20 minute walk from any interviewee, I could do only two interviews on a typical day.

Respecting The Language And Oral Traditions In Fiji

Upon arrival on the island, we participated in the *sevusevu* ceremony, which offers a gift to the Chief (traditionally a gift of *yaqona* (kava)), and formally seeks permission to enter the village. This ceremony is an important part of traditional Fijian culture, and an essential first step. Over the next couple of days, we met and spoke to a number of people in the village, and so the reasons for our staying on the island began to filter through this small community. But before beginning interviews and data collection in earnest, I thought it was important to ensure that I introduced myself and explained the purpose of my research and its confidentiality principles in person to the entire community. The opportunity for this presented itself at a Church service the first Sunday, which was a joint service of the two denominations on the island, held

specially to welcome us. With the help of the head of the family we stayed with (our host father), I wrote a speech that I gave in the local Fijian dialect. The shock, amazement and amusement on the faces of the audience was worth the embarrassment endured during my delivery of that speech. I definitely provided some light entertainment, as did the wonderful ladies closest to me, who every so often, quietly gave me corrections along the way. Regardless of my appalling accent and pronunciation, I am told I was understood, and the speech provided an important entry to my formal research beginning.

After spending a few days getting to know the people and island a little, this speech was intended as a mark of respect for both their local language and the importance of oral traditions in the Fijian culture. I had an information sheet prepared for handing out at the beginning of interviews anyway, but I felt that the speech was a more appropriate way in that community and culture, to formally introduce myself and my family and explain our presence on their island. Just as bringing my family to stay in their homes, eat their food and attend their school showed my trust in their community, speaking in their Church, in their dialect showed my respect for them and their culture, and my appreciation of their efforts in speaking English to us.

Having my family with me on the fieldwork

> Being the primary parent of a young child or children comes into play during every phase of the research, from conceptualising the project, to entering the field and gaining access to participants, to writing up the results (Brown and De Casanova, 2009, p54).

The decision to bring my family with me to Fiji shaped each stage of my research, though none more so than during our time in the village. In the research literature, certain roles have been identified for children of fieldworkers. Children, just by 'being there' help their parents to occupy an understandable role in the social structure of the community; they improve access to information and build rapport between the researcher and the community who are also the informants; and provide the common denominator

of 'parents' thereby helping to reduce other potential hierarchies in relationships (Levy, 2009).

Ice Breaker

Just as at home, everyday life with children is different to life without them. You go to different places, talk to different people and do things at a different pace.

> The researcher's look at society is much closer with family - you cannot escape groceries, hardware stores, schools, clothing shops, movie theatres...with family are opened companion worlds of information that aren't available, or at least often explored, by men or women when alone, a point whose significance I can't emphasise strongly enough (Starrs et al., 2001, p77).

My children were a reason for going places and an excuse to talk with people. They meant that we spent time at the school and with the teachers, and were the reason for walking through the village sometimes looking for them. Walking through the village is always good – it makes you visible and allows the opportunity to see and greet people.

Complete, Whole Person

In ethnographical research, the characteristics of the researcher make a difference to the whole experience of researching - what you are allowed to see, what you are told, and what you notice and conclude (Townsend, 1999). Seeing me as a wife and mother and not just a researcher helped to make me a whole person. This is particularly important in Fijian culture with *talanoa* research where people want to know something about you and learn to trust you before they will open up and speak to you. Having the children around and just doing the everyday things you need to do as a parent meant that people knew something about me before I had even spoken to them, and had seen me around the village. When I first spoke to people, especially the mothers and fathers of young children, we had stories to share of what our children had

been doing together. It made me less strange, less of an outsider. I was a fellow school mum.

Evidence Of Our Trust In The Community

Bringing our children to the village to live for the month and attend school there showed that we trusted the community to care for them. This was very evident to them and I believe, greatly appreciated. I think that helped in my interviews since the people had some initial degree of respect and trust in me that I would otherwise have had to earn.

Educational Experience For The Children

As a mother, I can see that the fieldwork was an incredible and educational experience for my children. They were able to attend school and become immersed in a completely different culture, as the first and only foreigners to do so. This placed them in a privileged position, which they do not understand right now, but I hope will come to appreciate as they grow older. The village way of life is so completely different from ours, and living it has taught them a lot.

The freedom and independence that come with living in a small, car free, tight-knit village community gave them the confidence to explore and experience the people and places on their own. It took a week or so (especially for my husband and myself), but once we all felt comfortable, my then six and four year old children would leave the house after breakfast, and return by sunset. There would be visits throughout the day, but essentially they were free and welcome to play all day long with their new friends. I remember my four year old son coming back to the house early one afternoon. I was concerned that he had missed out on lunch - “no Mum, I had lunch with my friends up at that house over there”.

Better Focus On My Research

As a mother, if I had tried to do this fieldtrip without my family, I would have been very distracted and detached the whole time, as a large part of me would have been at home with them. With the security and comfort of having

my family with me, I was able to focus on the task and immerse myself in the work.

Excuse For Cultural Faux Pas

In a Fijian community, it is considered rude not to accept invitations and be part of community events. This included drinking kava (*yaqona*). The cultural significance of this is not lost on me, and I wanted to participate, but it is really not my favourite drink, and I wanted to have a polite one and then depart. Timed to perfection, my daughter became upset with having both of her parents away from her in the dark, and so I was able to leave the kava drinking duties to my wonderful, understanding (and not unwilling) husband.

Disadvantages

Having your children in the field does have downsides too. "It is not hard to imagine that children frequently take their parents out of fieldwork contexts, closing as many windows as they can open" (Levy, 2009 p318). While it is undoubtedly true that having children to take care of detracts from the time and energy available for the task at hand, and that some potential opportunities are less easily accepted when there are children to consider, I think all of the situations may be viewed as 'glass half empty versus glass half full'.

Distraction.

Naturally, at times my children were a distraction from my research. For example, small things such as wanting to be at the house when they came home from school for lunch. There were days when someone was sick and I had to step up to the role of mother instead of doing an interview. The time-consuming facts of parenting in this situation were only made possible by having my husband with me, who was able to undertake these duties most of the time.

Walking the line between parenting and cultural respect.

My four year old son is aptly described as a fussy eater. So trying new foods was always going to be difficult for him, and we knew that our nightly negotiations at home over eating his dinner would transfer in some form to the

village. What we had not realised is that the battle would end up being between us and our hosts. In Fiji, it is very insulting to say that you were at someone's house but did not eat well or there was not enough food. After a few evening meals of predictable debate and us trying to keep the heated discussions to a minimum so as not to cause a fuss, our host father approached the topic head on. He said - even though we understand that as parents you want him to eat well, you must understand that it is important for us as your hosts that he eats a lot and easily. We had to give in to this and try not to think about it as our son ate chocolate biscuits for breakfast and did not consume a single vegetable for a whole month. Cultural respect one, parenting nil. But it did not hurt him, and was very important to them.

Not understanding cultural situations can be more stressful.

On our final night in the village, we were invited to the Pastor's house, where the Chief and elders of the village were gathered for a farewell for us. At the same time, a separate farewell was organised for our children. We were in a less familiar part of the village, in the dark evening, and did not really know what was happening when, or for how long. My daughter particularly, was uncomfortable about this and wanted to be with us, becoming more and more upset, until I had to leave the function with her. The lack of both understanding and control over the situation was very difficult with children. Without children we would have been able to focus more clearly on the honour we were being presented with.

Increases the consequences of communication breakdowns through language barriers.

One day, a group of us planned to go out on the boat to the main island for the day. My family and I did not know all the detailed arrangements, but then we spent so much of our time not really knowing what was going on that we did not think too much about it. On this occasion this resulted in our young children ending up on a boat trip to the other side of our island without us. The teenagers in charge of the boat were perfectly capable, and our children were safe the whole time. The adults around us knew this, and so it was understandable that they thought it would be fun for our kids to go on their

own. For us though, all the other factors loomed large. We were far away from home, using an unfamiliar form of transport, there were no lifejackets, and we knew that our children did not know what was going on and would be too scared to ask. An unremarkable event turned into a frightening one, because of a simple communication breakdown - a few seconds of not thinking about the language barrier.

After My Family Had Gone Home

Leaving the village also meant leaving my family for the last two weeks of my trip, as they had to return home to Australia. I fully expected that the final two weeks of my trip, in Suva, would consist of me trying to stay as busy as I could to distract myself from missing them. Even after five weeks in Fiji, I had managed to underestimate Fijians' kindness and generosity of spirit once again.

While the two weeks were very busy for me with trying to finish my data collection, I need not have worried that the evenings and weekends would be spent feeling lonely, and missing my family. Instead, I spent much of those times with the Suva part of my new family. Just as I started longing for the fabulous food on the island in place of microwave meals in my hotel, I found myself at family gatherings and being given precious leftovers of the wonderful home cooked Fijian food. The Suva branch of the family was just as generous and friendly as we had experienced on the island, and I remain very grateful for it.

Lessons learned

Many of the incidents referred to above did not happen while I was trying to do an interview, or conduct a focus group. You could say that therefore they did not affect my research. However, in this kind of fieldwork, it seems that everything impacts the research. These incidents changed my perceptions of the people and places we were in, and similarly, would have changed the villagers' perceptions of me. Some of those changes were undoubtedly positive, as they helped to make me a whole person, not a strange researcher to the Fijians. Other changes were probably not so positive. The incident on the boat trip must have come across as though we did not trust the two boys

driving the boat, which may have been offensive or rude. Trusting them was not the point, but explaining the subtle differences was difficult with the language barrier.

Other researchers have recommended taking your family and children with you on fieldwork trips: "...if you're married and/or have children, do try to bring them along. Again, as a family, you may enter the culture more completely" (Veeck, 2001, p39). I would definitely take my children with me again on a research field trip. It was an invaluable experience for them and us, to be immersed in a foreign culture and place, and become part of another family.

The fact that Fijians are relaxed about things and so friendly and welcoming makes it a wonderful place to do fieldwork. Even in the capital, where *kai valagis* (foreigners) are a common sight, people in the street will say *bula* (hello) to you and go out of their way to walk you to your destination sharing their umbrella when it is raining. My family and I had an amazing time, and it was a privilege to be able to experience it. Relaxing into it yourself can be difficult, but well worth it. It will take longer than you expect, and will not be until the last minute, but things will get done - just turn up and ask.

3.7 Method of data analysis

The choice of qualitative analysis method involves several important considerations. These include type of data, the number of cases, epistemological leanings, underlying theories, and the expected outcome of the analysis in terms of what type of results are needed. For this study, the elements of the data are:

- Semi-structured interviews, translated or with participants with limited English language;
- Relatively large number of participants for a qualitative study, with 30-35 participants in each of two sites;
- Inductive-type method to answer research questions;
- Two case studies (research sites) with three groups of participants in each;

- Results to include within case study comparison of groups, and contrasting between case studies;
- Focus on the perceptions and experiences of the participants, rather than trying to get at one particular 'truth'.

A review of various types of qualitative data analysis led me towards thematic coding using template or framework type analysis. Following is an explanation of how this method was chosen, and why others were rejected as being less appropriate.

In the sociological tradition of qualitative research, text is analysed as a proxy for experience, with the research participant's perceptions, feelings, knowledge and behaviour represented in text that has been generated from our interactions with them, for example in an interview (Tesch, 1990). Within this, there is a distinction between analysis of the actual words, and analysis using themes and codes (Guest, MacQueen and Namey, 2011). An analysis of the actual words used, concentrating on the linguistics, phrasing, pauses and such would be problematic with the data in this study, since English was a second (or third) language for all participants and translators. Therefore, analysis methods such as discourse analysis, or phenomenological analysis (Biggerstaff and Thompson, 2008) were discounted as being inappropriate if strictly adhered to. However, the focus of interpretive phenomenological analysis in looking at the subjective experiences of the participants, and the acknowledgement of the interpretive role of the researcher are relevant and useful to the current study, and so a method inclusive of these broad elements was sought.

Another distinction between types of analysis is along epistemological lines, with interpretivism and positivism. Interpretivism is less structured, and seeks to interpret deeper meanings and understand multiple realities, rather than one objective reality. Positivism on the other hand is closer to the scientific method and is more systematic and structured, less subjective and looks towards an objective reality (Guest et al., 2011). The desired analysis method for this study comes somewhere in between these extremes.

There are elements of interpretivism in that it is the perceptions and experiences of the participants that is the focus, rather than trying to get at an objective 'truth'. However, the structure and evidence base of a more positivist approach is attractive in adding rigour to the research findings. An approach was sought which effectively adds some structure to a method that allows for inductive reasoning and interpretation.

A general inductive approach that effectively forms the basis for inductive methods upon which different structures are built was outlined by Thomas (2003). The main purpose of this approach is to summarise the text, identify links between this summary and the research objectives, and then develop a theory about the underlying experience or processes. Categories or themes evident in the data are coded, and the codes refined until there are about three to eight summary or main categories. The higher level codes are derived from the research questions, with lower level codes coming from the reading of the data. The research questions and theory related to them are thus involved from the outset, making this approach slightly more structured than grounded theory. To maintain an analytical rather than purely descriptive approach, continual reflection back to the research objectives is required. Some general principles for this are three reflexive questions from Patton (2002): 1) Self-reflexivity - what do I know and how do I know what I know? 2) Reflexivity about those studied - how do those studied know what they know? 3) Reflexivity about the audience - how do those who receive my findings make sense of what I give them?

Using these reflexive questions as a basis, a practical iterative framework for analysis was developed, which involved constantly asking three similar questions: 1) What are the data telling me? - To clarify the lenses through which the data are viewed. 2) What is it I want to know? To connect the identified lenses with the research objectives. 3) What is the dialectical relationship between the - what the data are telling me - and what I want to know? Insights and analytical focus are continually refined through identifying gaps in the understandings (Srivastava and Hopwood, 2009).

While this iterative framework constitutes a method in of itself, it also provides a useful set of questions to guide analysis, suitable for a number of inductive methods. Another element of my required ingredients is the comparison between the groups of participants in my study - the villagers, the aid organisations and the governments. Qualitative comparative methods are often suited to smaller data sets than in this study, and often focus on a comparison of individuals rather than groups, as required in my study (Rihoux, 2006). So-called "fuzzy sets" are used for larger data sets without the individual case focus, however, this approach tends more towards quantitative analysis than I would like. This type of comparative analysis is looking at causality, which is not a strong focus in the current study.

A different type of analytical comparison was described by Hennie Boeije, labelled as 'constant comparison' (Boeije, 2002). This approach is well suited to comparison of groups, and outlines comparative steps: -

1) Comparison within a single interview - of different applications of the same code, looking for similarities, differences, contradictions. Produces - summary of the transcript, list of provisional codes, conceptual profile using the codes, memos describing the analysis process;

2) Comparison between interviews within the same group - themes as criteria for systematic comparison of interviews, clusters of interviews with similar codes, combinations of codes, criteria on which some interviews differ from others. Produces - typology based on the criteria, completion of new codes;

3) Comparison of interviews from different groups - becomes part of data triangulation with comparison of groups to confirm and validate typologies. Looks at view of different groups on the same themes, and themes appearing in one group and not another.

The iterative framework provides a set of questions to aid the analytical process in linking findings with the research aims and questions. The constant comparison method provides logical steps for comparison between and within groups to identify similarities and differences. These elements were used with

the framework approach, as developed by social policy researchers at the National Centre for Social Research in the United Kingdom (Smith and Firth, 2011). This approach is more structured than general inductive methods, with interconnected states for systematic analysis. It is well suited to cross-sectional descriptive data, where different aspects of the phenomenon under investigation are captured (Ritchie, Spencer and O'Connor, 2003).
Having the three different perspectives from my three groups may be seen as cross-sectional. My two case study sites of Fiji and Tonga add complexity to this cross-sectional element of the research design. The stages, as described by Ritchie and Lewis are:

- Data management - reading and re-reading the data, identifying initial themes and categories, developing a coding matrix and assigning data to themes and categories in the coding matrix;
- Descriptive accounts - refining initial themes and categories to summarise the range and diversity of coded data, identifying associations between themes with a 'whole picture' emerging and developing more abstract concepts;
- Explanatory accounts - develop associations or patterns within concepts and themes, reflecting back to the original data to ensure accurate representation, interpreting and finding meaning in the concepts and themes, and seeking a wider application of concepts and themes (Ritchie et al., 2003).

In this approach, there will only be a small number of concepts at the end, each of which has a small number of themes within it. Each theme may have multiple categories.

My method of analysis for these data employs a framework approach as a structured inductive method of thematic content analysis. Interviews were audio recorded and then transcribed with the assistance of Transcriva software. Codes were applied to the data, with themes emerging from the data, using HyperResearch software. These themes and codes were then be refined, with associations between themes leading to the development of more abstract concepts, and patterns in the concepts and themes then being used to interpret

the data and develop explanatory accounts. Within this approach, the questions in the iterative framework approach were used to guide and focus the analysis and development of concepts. The constant comparison method was the basis of the logical sequence of analysis within and between groups of participants.

3.8 Methodological issues

There are two methodological issues that may affect the interpretation of the results of this study. The first concerns the participants and fieldwork locations. The two islands chosen for this study are deliberately remote, outer islands, with as many similarities between them as possible from the available options. The results of the study are observations from these remote islands, and contrasts and comparisons between them. Ideally fieldwork would also have been undertaken at a regional or urban centre in each country, to allow for comparisons between the remote and urban settings. This was not possible due to time and resource constraints, which meant that differences between those settings could not be tested in this study. Therefore, where assertions are made in this regard, they remain assertions to be further tested in future research.

The second methodological issue concerns the use of interpreters. Resources did not allow for trained interpreters to be hired for the fieldwork, and time did not allow me to learn both anything more than rudimentary Fijian and Tongan languages. The fieldwork therefore relied upon a combination of interviewees being able to speak English, and local community members being willing to act as interpreters. This had different outcomes in the two countries. In Fiji, two local community members acted as interpreters for interviews. Both displayed fluent knowledge of English, and were willing to repeatedly assist. However, one was the outspoken daughter of the village Chief. When interview questions and conversations steered towards possible criticism of the Chief, cultural norms dictated that it was unlikely to proceed very far in that direction in her presence.

In Tonga a greater number of people assisted with interpreting, but most for only one or two interviews. There were varying levels of English amongst these volunteers, meaning that overall it was more difficult to have in-depth conversations during the Tongan than the Fijian fieldwork. The turnover of interpreters in Tonga also meant that the translation was inconsistent, and no individual was trained and more at ease with the role through the experience of multiple interviews.

3.9 Conclusion

This chapter provided details of the methods chosen for this study, and the ways in which the method and procedure evolved with the project as circumstances dictated. The cross-cultural nature of the research was both challenging and rewarding. It added layers of complexity to the task, with identifying and observing culturally appropriate approaches and behaviours, and the practicalities involved in overcoming the language barrier. However, the rich primary data gathered from the experience cannot be gleaned from the safe confines of desktop research.

The fieldwork in Tonga was, in many ways, less successful than in Fiji. There was a less welcoming and inclusive atmosphere, and the need to change focus to the larger and less familiar village part-way through the stay hampered efforts both to foster good relationships and trust in the communities, and to find interviewees. Nevertheless, the fieldwork locations were similar in many important aspects - relative remoteness, population size in one of the villages, and recent experience with cyclones. Despite the challenges encountered in Tonga, a similar number of interviews were conducted in both countries, and the consistency in many of the results suggests good comparability. The opportunity to re-visit the island in Tonga following their most severe cyclone was valuable and provided important follow-up information, and contrast for those whose focus had been on cyclones and responses more than 20 years ago.

Chapter 4 - Experiences of disasters

This chapter is designed to introduce the people on the islands and their experiences of cyclones - how and when they think of them, what they do when one is approaching, and how they cope afterwards. The villagers have extensive experience of cyclones, such that in Fiji, no-one could recall an exact number of cyclones they had been in. Most guessed either five to ten or more than 10, but few confidently put a number to their response. In Tonga most people had experienced fewer cyclones and counted somewhere between five and ten.

Included in this chapter is an exploration of issues of diversity - gender and religion, both of which are recognised as being factors relevant to disaster response and recovery.

4.1 Thinking about cyclones

For most community members interviewed in both Fiji and Tonga, cyclones and thoughts about them were very much aligned with the cyclone season, which was agreed to be November to April. It was usual to think of cyclones only during this time, and not at all outside this season, and it was agreed that the communities rarely talk about cyclones or natural disasters outside the season. Within this, there was then a group who thought about them only when there was a warning sign, and others who felt they had to be prepared throughout the entire season, thinking about cyclones every day and preparing regardless of warning signs. There were just two community members (elders) in each of Fiji and Tonga who said that they think about cyclones all the time, either because they have seen the cyclone seasons change, and now believe that cyclones can come at any time, or because preparation goes throughout the year, as it includes which crops to plant when.

While statistically it is true that most cyclones occur during the nominated 'cyclone season', there are documented events outside this November-April timeframe. A report from the New Zealand Meteorological Service from 1971, listed tropical storms in Fiji from 1840-1970, with about two to four per year and included 10 events occurring in May, June, August, September and October (New Zealand Meteorological Service, 1971). Notably, the majority of the listed events had occurred since 1950s. There is much reliance on the cyclone season concept in both countries, from all participants - communities, aid organisations and governments. One community member in Tonga even nominated a precise date - 16th April - as being the end of the cyclone season, and a number talked about March and April as being the worst months for cyclones. With climate change potentially affecting the reliability and timing of seasons, the definition of the 'cyclone season' may need to be re-considered.

Some community members in both countries talked about a relationship between the frequency of cyclones and their strength. In Fiji, elders used to say that there would be a really big cyclone about every 10 years. In Tonga, a few people said that having regular strong wind was better than having a year or two without any, because then when the winds returned, they would be stronger and more destructive. These are interesting observations, which happen to tie in well with climate change predictions for cyclones in this region - that there may be fewer of them, but when they happen, they will be stronger and last longer.

4.2 Food preparation

In preparing for a cyclone and in coping with the aftermath, traditional methods for preserving food were mentioned far less often than traditional warning signs. This was consistent across both case study sites. Preparation for an oncoming cyclone was firmly focussed on securing housing, such as tying down the roof, and boarding up windows. Food preservation discussed was generally more about damage reduction measures than preservation after the event, and was limited to cutting leaves off cassava/manioc plants, and cutting banana leaves in half, as protection from the wind. Shopping for food was

mentioned as often as these methods. Only a couple of people talked about collecting and storing food such as coconuts and root crops.

Some traditional methods of preserving food were discussed, but there was a recognition that these are rarely used now, because people only need to survive for as long as it takes rations to arrive. In Tonga particularly, there was recognition that the traditional methods are not well known by young people because they 'haven't experienced the need'. This was quickly qualified with 'but they might'. In Fiji, it was observed that although the preservation methods used in the past meant that food was still edible for longer, it does not taste or smell good, adding to the reasons younger people are not interested in learning about them.

Methods for preserving food included burying cassava/manioc, softening cassava/manioc and breadfruit by soaking in water for four days, and grating and drying out cassava/manioc to make a type of flour. These preservation methods were said to make these foods last for up to one month, depending on the food and the method. Yams and kumala were mentioned as being food not requiring preservation, and there is a reliance on root crops during cyclone times.

4.3 Safe place to go

In large western countries that experience cyclones, once a warning has been issued that there is a cyclone approaching the coast, then at the most basic level, if you want to escape, most people could simply get in a car or on a bus and drive out of the way. As Hurricane Katrina demonstrated, in reality it does not always work that way, however, on a small island, that option is not even available. Instead there has to be somewhere safe to go, so evacuation centres are important.

Evacuation centres in Fiji are usually schools, community halls or churches. However, both government and aid organisation representatives confirmed that there is no standard policy or building code to be applied in labelling a building an evacuation centre, so the quality and standards are variable. Often, the biggest building on high ground is chosen, regardless of the quality of

construction. There is some donor interest in upgrading evacuation centres, but without a national policy, such work will be piecemeal and inconsistent.

Many evacuation centres are located in schools, which are seen as having advantages of being located within communities, being large enough to hold lots of people, and having the ready logistical infrastructure of the education department for operationalising them as evacuation centres when required. Extended stays in evacuation centres though are a cause of extended disruption to schooling, which is important for children's education and stability, in assisting recovery post-disaster. Some aid organisations and government representatives mentioned wanting to move away from the policy of having schools being evacuation centres, but there is no equivalent alternative at the moment.

The community members interviewed in Fiji all agreed that the school was their evacuation centre, and that they had been advised this by government. However, most people thought that it was still not safe. There was a common view that the school would withstand small cyclones, but perhaps not a bigger one, and that rain still comes in, so people are getting wet while trying to shelter from the cyclone. A number of people said that there is no really safe place to go, but the school is the best they have. "*It is safe because there is no other choice*" (Fiji, female villager, aged 35-45 years). A number of community members spoke of preferring *bures* (traditional thatched huts), which they considered to be stronger than modern houses. Older villagers said that *bures* shake and rock in the wind, giving warning of collapse while it is still safe to evacuate slowly to some other place, whereas the modern houses it seems, do not provide any warning before tin roofs fly off right in the strongest part of the cyclone, when evacuating would be most dangerous. "*She said she needs, she's been telling them she wanted a bure for her evacuation centre*" (Fiji, female villager, aged 60+, through an interpreter).

The situation in Tonga was broadly similar. An aid organisation representative said that almost every community raises the problem of needing an evacuation centre. The most common place used throughout Tonga for an evacuation centre is the local church hall of the Church of Jesus Christ of Latter-Day Saints (LDS), which are used everywhere they are located. The

LDS church is generally considered to be the church with the best financial resources in Tonga, and they build their churches specifically to be able to withstand winds of approximately 200 km/h. Most community members interviewed in Tonga felt that the LDS church was a safe place to be during a cyclone. Similar to in Fiji, many spoke of their preference for a traditional Tongan *fale* as an evacuation centre, with some people suggesting that every family should build one. During cyclones, Tongans would knock down the walls of their *fale*, and then shelter under the roof at ground level:

> *The Tongan houses, the parents and all of the families, they hid there. But not inside the house, they break down the walls, only the top of the house, they just put it down and hide inside. That's the safest place* (Tonga, female villager, aged 46-59).

The absence of the tin roof common to more modern Tongan (and Fijian) houses is another key factor in the safety preference for traditional houses. Indeed it was a flying tin roof that killed the victim of Cyclone Ian that hit Ha'apai in January 2014 (Morrah, 2014). It has been said that in some instances, Pacific islanders living in more modern homes for comfort and status reasons is an example of a failure of traditional knowledge (Kelman et al., 2012). Particularly in the Fijian village, there was much better knowledge around how to make *bures* safe for cyclones, than for the modern houses in which most people now live. The Fijian disaster relief houses are designed as a starting point, with further additions required to increase their safety, however, many villagers did not know this, or specifically what to do.

Not having an evacuation centre, or not getting there early enough, is certainly a risky proposition. In Falemea village during Cyclone Ian, one family ran from building to building as each in turn had its roof ripped off, and the walls collapsed. With options fast running out, they used an axe to smash a hole in their concrete water tank, and sheltered inside it for the remainder of the four hour storm front, climbing inside before the water had even completely drained (Photo 4.1 Makeshift evacuation centre).

Photo 4.1: Makeshift evacuation centre

In both Fiji and Tonga, community members mentioned building their own evacuation centre. In Fiji, one of the villages had started a communal savings plan for this purpose. However, with the cost of such a construction high for incomes in this community, and a lack of clarity around government policies and procedures to assist community action of this kind, it is likely to be a very long term project.

4.4 Preparation and complacency

In Fiji, both aid organisations and community members spoke of a lack of preparation for disasters as being about the normalisation of these events, rather than deliberate complacency. There is a perception that cyclones are normal - "*We are fine, that's the usual cyclone and it's been here forever since I was born, so after this we will recover. That's a village perspective*" (Fiji, aid organisation representative). The community interviews supported this perception, with people saying that cyclones do not really change people's behaviour, but that things return to normal and people do not think about it afterwards. Some people thanked me for coming to their village to talk to them about the issue:

> *…you wake me up again. Because we know the cyclone, so sometimes we don't bother, last year or this year. But when you came here to do your researching about the climate, so you wake me up to be prepared, like that* (Fiji, male villager, aged 60+).

There was general agreement that people both within the community and within Fiji as a whole, do not really talk about cyclones and other disasters much outside of the disaster season. An aid organisation representative said - "*Now one of the things is that if you listen to all the radio stations that are on right now, nobody talks about the disasters, until they happen*" (Fiji, aid organisation representative). One villager's summary was simply "*After the cyclone they are ready for it*" (Fiji, male villager, aged 35-45 years). It seems that sometimes the complacency and normalisation of disasters manifests itself simply in not being overly concerned about cyclones unless there actually is one, but at other times it extends to a lack of preparation when there has been a warning. I was told a story in the village of radio warnings for Cyclone Kina in 1993 being ignored by most of the village, even though there was one family trying to spread the warning message.

As ever though, there is always more complexity to the situation. One aid organisation representative talked about preparation for a cyclone as being risky. The context was harvesting crops to protect them from an oncoming cyclone, and that if the cyclone turns out not to be severe or to change direction, then some of the harvested crops may be wasted. Acting on a disaster warning is a conscious decision, and many factors will influence the when, how and why of that decision. Normalisation of disasters is one of those many factors.

The responses on Tonga during the main fieldwork were slightly different. A lack of preparation and taking warnings seriously was due to a combination of warnings happening most years, and a long time since the last major cyclone, with the biggest cyclone in memory being back in 1982. Smaller cyclones are commonplace and, similar to in Fiji, seen as being just part of life in the Pacific. The lack of experience with a more devastating cyclone is viewed as an impediment to good preparation:

> *My friend say to me 'I'm feeling sorry because my family do not know that you already warn me, but I don't do anything for my family. That's the first time for me to see the cyclone'. And I said 'that is my third time with a cyclone, you first time. Next time you will understand what to do when the cyclone is coming* (Tonga, male villager aged 60+ years).

The person telling this story did not even consider smaller events to be cyclones at all. In his view, stronger cyclones reach hurricane strength winds, and until then, do not really count. This attitude ties in well with the complacency around having only experienced regular, smaller cyclones - 'you think you know what you need to do because you know what it's like, but that's nothing'.

Some of the older community members in Tonga saw a clear distinction between those who are old enough to recall Cyclone Isaac in 1982, and those who do not, or who are new to the island and did not experience it:

> *He is talking about the real people in 'Uiha. They were worried about the notice about the wave or cyclone. Except the newcomers to 'Uiha. The newcomers to 'Uiha, they don't worry about anything, because they have not met any waves, see the waves or see the cyclone* (Tonga, male villager aged 46-59 years, through an interpreter).

Supporting this view, government representatives in Australia working on disaster response, have noted that people with experience of a particular disaster are better at coping with them (Boon, 2014). The experience on Cyclone Ian also provides support. During the feedback trip when villagers were asked about preparations for Ian, some said that the warnings on the radio were qualitatively different to in previous years, giving a clue that this time should be taken more seriously. However, for most people, it was just another warning. Even when natural warning signs were also observed, many thought they just indicated bad weather, rather than a major cyclone, and dismissed

them. There is a consensus among villagers that Ian has shocked them, and that while before they did not really care too much, next time around they will be prepared.

The dominant view in Tonga that a lack of experience with bigger cyclones leads to complacency around preparation does not bode well for the future. The predicted impact of climate change on cyclones in this region is for less frequent but stronger and longer lasting events (see section 1.3). This would mean that at any one time, there is likely to be a larger proportion of the population with no living memory of a large cyclone. According to the perceptions and experience in Tonga, this is likely to mean that larger proportion of the population is not taking preparations, the key to survival, seriously.

4.5 Gender issues

Gender divisions in Fiji are prominent, as they are an integral part of traditional culture. Men and women have separate and clearly identified roles, and in traditional villages, by and large, those differentiations are respected and adhered to, disaster or not.

On the island, most people I spoke to stayed well within the confines of those specified gender roles, and it was difficult, especially at first, to find anyone who would express alternative opinions. It was generally agreed that after a disaster, men are responsible for cleaning up the village, repairing houses, and re-planting crops and women are responsible for cleaning up the home, cooking, and caring for the children. This closely reflects the roles in daily life in a traditional village. Following on from this, most people also agreed that this translated into men experiencing greater stress after a cyclone, having more responsibilities:

> *He thinks that men are more reliable and they are responsible to make, try and rehabilitate them, the community and the family. So women are more likely to just look after the kids and cook. But for the building houses, men are mostly responsible to do that kind of work* (Fiji, male villager, aged 35-45)

> *Yes, more stressful for men than women because the men are responsible for repairing things and getting things to eat for the family, while the ladies just stay at home and look after the kids and do the cooking* (Fiji, male villager, aged 46-59).

The only problem with this expressed view is that it was not completely compatible with the daily routines I witnessed on the island. Women were usually involved in fishing, which plays a major role in the provision of food, including after a cyclone. Women also helped on the plantations. Men rarely crossed into women's traditional roles, although I did see this when women were injured by stingrays while fishing and their husbands helped with the cooking for the next day or so. This blurring of traditional role boundaries was explained to me:

> *If they (men) have the late night with the kava bowl then the women will just have to do the planting…they do all the housework, they do the plantations, they go fishing. While men can't come in and clean the house. Everything they do is just try to do the repair and the plantations. For them, they can't do all* (Fiji, female villager, aged 35-45 years).

One of the younger villagers I interviewed thought that in a disaster situation, traditional gender roles should be irrelevant:

> *Men and women have to work together. Never mind that's not your role. You have to help that one, help your husband. Cleaning up, building up, replanting. We have to work together* (Fiji, female villager, aged 35-45 years).

In my later interviews, when the community seemed more comfortable and trusting of me, issues around the gender roles started to emerge, particularly from younger women:

> *Very very different. The workload is the women's. Because the ladies, when we wake up in the morning, we start, until at night. But the men, no. One or two working one day, then have a rest. If they want to, otherwise, nobody can force them. You can't give orders to them, but they can give orders to us…Because the children are there, no mother will want to see her own children crying, wanting to eat. But for the men, they can go with it - go to your Mum. For Fijians, it happens. Like the load is given to the mother, Mum has to do everything. That is one thing too I have experienced in this village. Like the women you see, going out to the plantation, going to the sea, going to get firewood. Not just in the cyclone season, but it's their daily routine. And when the men sit and drink kava in the night, they will just be sleeping the next day. Sleep the whole day. Who does the work is just the mother. It's their daily routine* (Fiji, female villager, aged 35-45 years).

> *It's mainly to women, the workload. Men they just come, they say things and they go away. We are the tools. In the morning, from morning they are starting until late at night* (Fiji, female villager, aged 35-45 years).

In the stresses of the aftermath of a disaster, when there is devastation all around, but the need for food and shelter do not wait, inevitably tensions will rise and the conditions for conflict are present. There were two contrasting examples provided to me of when such conflict arises. Firstly, in the organisation and co-ordination of the clean-up and repairs to the village:

> *Well, most of all it (conflict) is just the men. Because after that there is a meeting, whatever we have to do this, we have to do that, that house has to be replaced, so like women are just following them. So most of the ideas are just amongst the men, and the differences are just between the men* (Fiji, male villager, aged 60+).

With the traditional role of women being passive and submissive, they are not as involved in the decision making processes within the village. The men "*are the ones masterminding everything*" (Fiji, female villager, aged 60+). Consequently, they are less likely to be involved in any conflicts arising through those processes. However, the home is the domain of women, and it is there that conflicts among women arise:

> *Because the hurricane, no houses left. But in that time, you can stay, live together. But we used to do temporary houses very fast. Men can stay together, women can't. Understand?…for one week, two weeks. Women can't…Fijian men can stay together, just talanoa* (talking), *laughing together. Women can't, just a short time…Sometimes the women, fight about how things should be done. You have to understand about that* (Fiji, male villager, aged 46-59 years).

The gender roles did not always hold however, during the trauma of the disaster event. Stereotypically, men would be the strong ones, and most responses from the communities were steadfastly consistent with that picture. One woman in Fiji though, described how her husband was unable to deal with the stress and pressure during the cyclone, leaving her responsible for the safety of their children:

> *I ask the torch to my husband, you give the torch. That one there, can't hold himself. He was shivering like this, my husband…he was too scared. And me no…me was not so scared like that one. He was lying like this and I asked him, give the torch to me, I want to see the roof…(Interviewer: you were trying not to be scared?) Yes, because of the kids. Because I was responsible for my husband to take care of us. That one there was shivering and too scared. I tell him not to be scared because of those kids there. I call him, hey, what's wrong with you? And he can't talk. I try my best to take responsible for those kids. My last one there was two or*

> *three years old. I was telling him, wrap him in the blanket, and I run to that house up there. That one there take only one pillow and one blanket, and run up there, my husband. He was so scared…I told them - you run. You have to find your way there. You run. But that part there was so bushy and they needed the torch there like that. The torch that my husband was taking first* (Fiji, female villager, aged 35-45 years).

Aid organisation representatives talked about other ways in which the traditional gender divide impacts upon women. For example, with damage assessment teams being male only, certain topics are taboo for women, which may mean that certain needs are not attended to. You cannot ask for underwear if you are not supposed to talk to a man about not having any. There were reports that in some damage assessments, only male-headed households are recognised, which makes assessing support and aid extremely difficult for female-headed households. The responsibility women take for disaster risk management is sometimes not recognised, even though with traditional gender roles, it is women in Fiji who are most often closest to the home. These types of issues for women in disasters have been recognised worldwide (Heckenberg and Johnston, 2012).

Gender impacts discussed in Tonga were from a slightly different perspective. The community in Tonga recently had an aid organisation project on diversifying income implemented in Falemea village. This led to more reliable incomes, and an understanding that sharing the load of work reduces the pressure on everyone. For example, one or two boats will fish for the entire community when there is a large school going past. When the boats arrive back at shore, villagers (men and women alike) will all help in getting the fish out of the nets. The fish are then divided amongst those who participated. Because the number of people is what's counted, both men and women help. However, on a day to day basis, roles are clearly defined for men and for women.

Most of the income in the Tongan villages came from selling mats that are woven from pandanus leaves. This is a real industry in those villages, with most women spending all day weaving. Gender issues become apparent after a

cyclone because the pandanus plants are destroyed and can take six to nine months to re-grow. During this time, money is a real concern within the village, and men must try to take over the income earning role, selling fish at the markets. In Fiji, most of the income is derived this way, and once the seas are calm enough, fishing can re-commence fairly quickly. But in the Tongan villages, it seems that the source of income is more severely disrupted.

Gender issues are complex in Fiji and Tonga, and have a variety of impacts not only within communities, but for aid organisations also. Aid organisations in both countries spoke of the difficulty in meeting the conditions of donors for female representation on village committees for projects. Some donors make such representation a condition of the project and the aid organisation is left to convince them that a committee of all men is better than no committee at all in communities where having even one female representative is a huge step forward:

> *That's the other thing we face is the international norms of gender and equality. When you get to community level, how you play this is really the difference between your project succeeding and not succeeding. At the other level, the donors and the Australian office, they can't understand that. When we say 'oh no, the community said no women'…'no, no, no, you have to have women'. But it's better having a committee of all men than no committee at all and then something happens. I think in one way it's been a big push towards that gender equality thing in as many committees as we have, to have a women representative and a youth representative* (Fiji, aid organisation representative).

The extent to which traditional gender role boundaries may be blurred will affect preparation for and response to cyclones and climate change impacts, in terms of both resources and ideas available. Where only men are involved in decision-making, half the population's ideas and efforts are at risk of being wasted opportunities.

4.6 Faith and religion

In both island communities, religion and faith and trust in God were an important part of daily life:

> *They trust to God every time and every day and night, and during our work, we thinking about the God, and trust him. All the time. We do our work and think about the God, give us a chance to make the pandanus* (Tonga, female villager, aged 60+).

Many people described turning to God and their faith, during times of disaster, and that this not only gave them strength, but that sometimes prayer will change the course of a cyclone:

> *For us, we are a Christian country, so in the community on this island, what they have experienced before, sometimes when there is two or three cyclone warnings coming, sometimes they have a prayer session, and sometimes the cyclone changes its course. So most of them come and then go somewhere else, and they believe that. That is what they have been experiencing in the past* (Fiji, male villager, aged 60+).

This strong belief in the power of prayer was mainly held by the older community members, although not exclusively. The speaker from the above quote apologised for his beliefs, thinking that he would be considered foolish, but maintained that they come from experience.

It has been suggested that reliance on faith is a hindrance to action on issues like climate change (Lata and Nunn, 2011; Barnett and Campbell, 2010). Many villagers expressed the view that environmental changes and challenges are God's will, and some took this further, to mean that therefore the only thing people can do is pray:

> *If it's God's will, then it will happen. If it's not God's will, then it will not happen…only if they pray harder and harder to God to stop the water, it is possible for him to stop the water…he is the one who can stop it* (Tonga, female villager, aged 18-25).

Certainly, the perception that people rely on faith instead of their own actions existed among some aid organisations:

> *For example with the coast line, if we are predicting that in 20 years for example, we'd say about 1000 people in Fiji will have to shift to higher level of ground for sustainability. But then people are not ready for that. They prefer to turn to their faith, to be optimistic about things, and say that this is nature and nature can take care of itself and we need to pray about it. That's the culture here in Fiji* (Fiji, aid organisation representative).

However, most people thought of God as the ultimate authority rather than the only actor, so that people have to try in the first place:

> *What I believe, if I have to tie down something outside. But if God like to damage our property, then everything I did has no meaning…take the first step, God will do the rest* (Fiji, male villager, aged 60+).

> *We can do the praying, so that is the protector. We can take faith that our prayer is working…our faith, if we pray and then sleep, then God do not help us. So we can work. We can pray and we can plant our trees on the beach so that God will see that we will work, and maybe he can help us* (Tonga, male villager, aged 35-44).

Indeed, the most devout person on the island in Fiji, was also the most prepared. The difference between just relying completely on God, and putting work in yourself as well was explained to me:

> *I think there are difference. I think some people believe God but only for their lives, directly for their lives, not for their material properties. Concerning their material properties like their house and all those stuff, they have to use their hands. But concerning directly their lives, that's what they know for sure that's someone else for that. So the rest, apart from their lives, it's up to them to do that. That's why they were given two hands* (Tonga, aid organisation representative).

> *Sometimes we have faith to the Lord. He is the one who look after our life. If we do like our pray. If we do the bad thing, maybe God will punish us. That is like our trust and our faith* (Tonga, male villager, aged 35-44 years).

Where faith is such an important part of a community, it will need to be taken into consideration. However, while it may sometimes make the path to community action more difficult, it should be considered an element, rather than an obstacle. Beliefs in the need for work in combination with prayer, and that people are the stewards of what God has provided and need to look after it, may be able to be harnessed to motivate climate change adaptation action at community level.

There were interesting differences in the ways in which Churches penetrated the communities in Fiji and in Tonga. In Fiji, with only two main churches represented on the island, the Pastors were given equal (or higher) status with the *mataqali* (clan) leaders in terms of joint decision making on the island. This meant that village committees included the pastors along with *mataqali* leaders. Presumably, this helped to ensure also that all community members who belonged to either church were represented on community decision making bodies.

In Tonga, however, with the relative proliferation of Churches represented on the island, their status was enacted in a completely different way. The power and financial control exerted by the Church of Jesus Christ of Latter

Day Saints (Mormon) in Tonga was clear in the village. Firstly at a purely visual level, the Mormon church was physically the biggest and sturdiest building (hence being used as an evacuation centre), and some houses, funded and/or built by the Mormon church stood out from others as being similarly bigger and stronger than their neighbours. Secondly, which Church you belong to impacts significantly on your post-disaster experience:

> *The Bishop is first to come to our home, because I belong to the Mormon church. That's why after it, only the Bishop come to our home and second the Town Officer. Look around. But the first time, help to us is our church, church leaders…the government takes longer. The church, the Mormon church, very good. After hurricane, after cyclone, they going to help hard and fast, good and fast…the other churches, they love their people, but they have not enough money to help their people* (Tonga, female villager, aged 35-44).

Many people in the community, and the Mormon church itself, were adamant that the church will help anyone who needs it, not just members. The fact that the Mormon church is the common evacuation centre for the whole community supports this, and the church has a separate charitable humanitarian arm that provides help to those who shelter there, regardless of membership. However, the difference in experience particularly post-disaster, depending on which church you belong to, was evident and obvious enough that it was considered to be a factor in choosing which church to attend:

> *But you know there is Bahai faith here, and Jehovah's Witness. They have a church not strong enough to build a house for their members sometime. Those people like this, they are the poorest people in the village, or on the island. There's people still living in the old way of living…you must go and join a church if you have something happening. In the future, your church will help you. But some people, it's a different way of living. People thought there is no cyclone every year. So they*

> *choose a church they don't donate money or something like this. But then a church like Church of Tonga, Mormon, Methodist or other church like this, they donated money. After a disaster is happening, the church will help people. Sometimes they bring food, they will build house, something like this. But some people say - no hurricane every time, so we choose the other church* (Tonga, male villager, aged 60+).

Faith in God, belief in the power of prayer, and membership of particular churches directly impacts upon community members experiences of disasters, with prayer an important consideration in preparation for a cyclone, and churches heavily involved in post-disaster response. Religion appears to be playing several important roles in these communities. Clearly religion has a role in aid and income redistribution, from both within the islands and from the developed world donations and funding. However, the importance the villagers place on prayer and faith both before and following disasters demonstrates the role religion plays in giving meaning to life and events, decreasing anxiety and despair, and providing a source of identity.

4.7 Conclusion

For the remote islanders in this study, cyclones are simply a part of life. They are scary and unwelcome, with devastating and sometimes deadly consequences, but nonetheless they are accepted. Most people have lived through multiple cyclones and many have experienced the damage or destruction of their homes as a direct result. With cyclones being normalised for many people, thoughts about them are usually restricted to the time of year when they are most likely to occur - the 'cyclone season'. Within this, some think about cyclones all the time, and others only when there is a warning sign. Traditional knowledge and practice about food preservation was less apparent, possibly because with disaster aid and food rations, people see less need for maintaining the 'old ways'. This may be reflective of diminishing traditional strategies (Barnett, 2001), and increased expectations of and reliance on aid (Mercer et al., 2007).

The normalisation of cyclones sometimes works against the communities also, with many expressing the view that people do not take warnings seriously and that some are caught unprepared. Indeed, the experience of Cyclone Ian in Tonga supports this, with many admitting to being ill-prepared, and vowing to do better in future. Having a safe place to shelter during a cyclone is vital in a location where retreating from the path of the storm is not an option. Most people simply go to the strongest building in their village or their immediate vicinity, but there was no consensus on whether or not these buildings are actually safe.

Faith was an important part of daily life in both study sites, playing an especially important role after cyclones in Tonga, depending on which church you belong to. The heavy reliance on prayer and faith in God is an impediment to action for some, and requiring action for others. In keeping with the Otin Taai Declaration (Pacific Council of Churches, 2004), elements of the strong faith should be able to be harnessed to the advantage of community action and responsibility into the future, with prayers only being answered if you work, and people being the stewards of what God has provided. The parallel practices of non-Western countries (Chester and Duncan, 2010), support the notion that the strong faith may be harnessed for resilience and adaptive capacity.

The islanders are highly exposed to disaster. They live in places that frequently experience cyclones, in low-cost westernised houses that are constructed to serve the purpose of providing shelter, not cyclone-resistance (unlike traditional Pacific island homes). They are not, however, helpless. The positives of remoteness (see Chapter 9) - good local environmental knowledge, resilience and strong community bonds - are apparent in the strength and resilience of these isolated peoples.

Chapter 5 warning signs of cyclones[6]

On remote islands where communications are not always reliable, warnings of cyclones come from multiple sources. This chapter documents some traditional warning signs that were described during the community interviews. The signs cover a broad temporal spectrum of warning, and show remarkable consistency between the countries.

5.1 The importance of warning

The best chance a person has of being safe during a disaster is to know that it is coming – well positioned and managed evacuation facilities will be empty if no one has time to reach them. The importance of early warning systems for disasters is clear. How to translate that need into efficient and effective systems is not always so clear. An early warning system is:

> The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss…A people-centred early warning system necessarily comprises four key elements: knowledge of the risks; monitoring, analysis and forecasting of the hazards; communication or dissemination or alerts and warnings; and local capabilities to respond to the warnings received (UNISDR, 2009).

A system will be less effective when one of these elements is weak or absent.

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The socio-psychological steps involved in responding to warnings are hearing, understanding, personalising the risk, and the decision to respond (Paul and Routray, 2013). Some of the reasons why warnings are ineffective or people do not respond in a timely way are economic factors, lack of understanding, experience that official warnings are not always reliable, inconsistencies in the warnings, and warnings coming from a single source only (Howell, 2003; Ronan and Johnston, 2005). Cyclones in particular are unpredictable in their behaviour, and so official warnings are often considered unreliable (Veland et al., 2010). People need to trust in the warnings and in the need to act upon those warnings. It has been found that communities with good traditional knowledge and oral histories of previous disasters are more likely than others to survive disasters (Arunotai, 2008; Mercer et al., 2007).

Traditional or Indigenous knowledge is a:

> body of information passed down through generations in a given locality and acquired through the accumulation of experiences, relationships with the surrounding environment, and traditional community rituals, practices and institutions (Kelman et al., 2012, p13)

This type of knowledge is often overlooked and undervalued as not being 'scientific', but rather inaccessible and different or difficult to deal with (Mercer et al., 2007). However, natural warning signs are understood locally by people who may feel alienated from the scientific system, and give good lead times for preparation (Howell, 2003). Traditional knowledge has been found to significantly enhance the ability to understand and interpret warning information (Sharma, Patwardhan and Patt, 2013). The incorporation of traditional knowledge into warning systems has been recommended to increase perceptions of reliability and hopefully thus increase responses (Howell, 2003; Paul and Routray, 2013).

While there have been studies looking at how to integrate traditional and western scientific knowledges (e.g. Cronin, Gaylord, Charley et al., 2004; Hodgson, 2010; Kelman et al., 2012; Mercer et al., 2010), there are few studies concentrating on actually documenting the traditional knowledge on weather

forecasting and early warning signs of cyclones. Some have been done in Bangladesh (Howell, 2003; Paul and Routray, 2013), Samoa (although about weather forecasting generally, Lefale, 2010); Vanuatu (concentrating on one tsunami event, Walshe and Nunn, 2012) and the Cook Islands (United Nations Educational Scientific and Cultural Organization (UNESCO), 2011). Fewer still, are studies seeking to validate natural warning signs by looking at the statistical links between them and actual events. One is also currently underway in Vanuatu to validate traditional weather forecasting against scientific forecasting, following a successful pilot in 2012 (Government of Vanuatu, 2012). More work has been done in this field in relation to earthquakes both in documenting signs and validation (e.g. Grant and Conlan, 2013; Tributsch, 1982; Yong, Tsoi, Feibi et al., 1988).

This study adds to this growing knowledge base, by documenting traditional warning signs of cyclones on two remote islands in the South Pacific, one in Fiji and one in Tonga. The study provides evidence from two more locations, and directly compares traditional warning signs of cyclones in two different countries.

5.2 Descriptions of the signs

Community members on each island were interviewed and asked how they know if a cyclone is coming, for details on any natural warning signs they know of, and which signs they consider to be the most reliable. On both islands people talked often about the importance of having some warning before a cyclone arrives. Those with the most experience of cyclones considered warnings to be more important than the strength of the winds:

> *Never mind it's a strong hurricane, the warning is the best thing to come…the warning is more important so you can get people to be prepared* (Fiji, male villager, aged 60+).

There were a variety of warning signs and methods discussed, including a mix of traditional signs and radio warnings. Some signs were mentioned by only one or two people; others by almost everyone interviewed.

There were more than 15 different traditional warning signs described, and many people nominated traditional signs as their first and most reliable ways of knowing that a cyclone was approaching. These signs cover a broad temporal spectrum of warnings, from months to days, and were often described in terms of being specifically traditional knowledge, passed down through the generations, and applicable to their local context. There was remarkable consistency between the Fijian and Tongan communities in terms of the traditional warning signs described. Most of the signs described in Fiji were also described either closely or exactly by community members in Tonga. The warnings concern the behaviour of both flora and fauna, as well as the wind and the ocean.

Nesting behaviour of bees and hornets

In the months prior to the November-April cyclone season, honey bees and hornets build their nests closer to the ground. In Tonga, this was noted during the one to two months prior to a cyclone:

> *It's telling by the insect named bee. If they were coming with their home and live under the tree like this (points down low), tell them there will be a cyclone. And if they are hiding up the tree, there will be no cyclone. They are telling it by how they live* (Tonga, male villager, aged 35-45 years).

In Fiji, the nesting of the honey bee was noted to change earlier than in Tonga, during the July-September prior to the November-April cyclone season.

Fruit growth

Fruit, especially breadfruit, grows in bunches rather than just one or two together: "*Here on the island, when there is plenty of breadfruit, they say that next year there will be a cyclone here*" (Fiji, male villager, aged 45-59 years).

In Tonga, this was explained as being related to a lack of rain during the early part of the cyclone season. Less of the heavy summer rains means that the baby fruit are not damaged, so they are more likely to grow in bunches. This sign, of fruit growing in bunches, was described consistently in Fiji and Tonga.

The new growth on banana plants changes shape, curling over instead of growing straight up, in the period preceding a cyclone. Almost identical descriptions of this sign were provided in the two countries:

> *Some signs that our older generation used to talk about, he has experienced that as well. The vudi plant, like a banana but short and fatter, the shoot right on top, when it's three or four months before a hurricane, it comes down like this. It used to point up, the younger leaves* (Fiji, male villager, aged 60+, through an interpreter).

> *He is talking about the old people. They can understand there must be a cyclone for about months or weeks before cyclone hitting our village or Tonga. They are looking for, you know the banana trees, and the tree like this, you know the young one. The straight one is going like this, show us nothing bad, the forecast must be good. If bend down, you know, the trees understand there must be a cyclone* (Tonga, male villager, aged 45-59 years, through an interpreter).

Ocean currents and tides

In Fiji, the community members described changes in the currents of the ocean, about one month before a cyclone:

> *Current, because when the waves come on the barrier reefs, sometimes it's coming with a lot of current, and then we can experience that when the tide comes in, it goes right to the beach. Sometimes we can see the big waves coming when it's high tide like that, from the open sea* (Fiji, male villager, aged 45-59 years).

The Tongan villagers also described the behaviour of the ocean currents and waves as being a warning sign of a coming cyclone or bad weather. The tide rises, with waves coming in towards the houses, before the cyclone comes.

There was also a description of changes in the shape of waves:

> *From the waves, also the wave of the sea. When the waves are too strong, sometime you can see there is like a flag on top of the wave. If there is another small one like a flag over the wave. There's nature tell us to get ready, something will happen in the future* (Tonga, male villager, aged 60+).

Rainbows

The villagers in both countries noted changes in the shape of rainbows. In Fiji, the change is in the appearance and timing of the rainbow:

> *Another sign is like a rainbow, but rainbow is longer, this one is a little bit shorter. Sometimes when it's a good day like this, you can see this rainbow. So then they know that there are some changes coming in the weather, especially the strong wind or hurricane* (Fiji, male villager, aged 60+).

In Tonga, an incomplete rainbow is a warning sign:

> *They said they can tell when they see the rainbow, half rainbow. Then it might be bad weather or cyclone. Half rainbow* (Tonga, female villager, aged 35-45 years, through an interpreter).

Birds

The behaviour of a particular type of bird was the one of the most common natural warning signs in both countries, with especially detailed descriptions from a variety of people in Fiji:

> *We see birds like that. There's one big bird that usually knows that the hurricane or bad weather is about to come. A big bird, if it gets down. It flew up there. If it gets down to want to touch the ground, that's a warning that a hurricane or bad weather is about to come. If it's*

> *high up, that's OK…big wings there. We call it manu ni cagi (bird of the wind)* (Fiji, female villager, aged 35-45 years).
>
> *Another sign that he knows, is a type of bird. A bigger bird. We have a special name for it – bird of the wind. We hardly see them on a day like this, but when we see them coming in numbers, about 20 or more, then it is a sign that a cyclone is coming. When they are coming down, because they normally are at cloud level, but if they are coming down, about 20 or more of them, that is a sign for him* (Fiji, male villager, aged 45-59 years, through an interpreter).
>
> *There is the hurricane bird. It's a sign to here that there is a cyclone coming…it never fails. If she sees the birds, strong winds are definitely coming. So that's the only time that she recalls the hurricanes – if she sees those birds* (Fiji, female villager, aged 60+, through an interpreter).

Similarly in Tonga, there were numerous descriptions of a particular bird, *motuku*, being a reliable warning sign:

> *Sometimes they can tell the bird, there is a big bird, flying and they can tell there's going to be a big storm or hurricane…the black one, big and black* (Tonga, female villager, aged 60+ years, through an interpreter)
>
> *It was the black one, and they have something on the back. And if it's open like this, there will be a cyclone, and if it's closed like this, then there will be no cyclone* (Tonga, female villager, aged 35-45 years).

Coral reefs

In Fiji, community members described the sounds coming from the coral reefs near their island when a cyclone is approaching: "*And the reef, like in the night, sometimes when it's calm you can hear the reef like roaring, crying*." (Fiji, male villager, aged 60+, through an interpreter). "*The reef will be roaring. It's a kind of sound that we hear which is different from now*" (Fiji, female villager, aged 60+). "*She (mother) told us, when you hear the sound of the sea, boom, don't sleep, wake up, it's time to get up*" (Fiji, male villager, aged 45-59 years).

In Tonga, it is the appearance of the reef, rather than the sounds coming from it, which signify that a cyclone or bad storm is coming:

> *And they said they can tell from the reef. The reef was very white from the waves. Because when it's normal, we can tell, like there's no reef on the ocean. So if anyone goes to the beach and they see every reef is white, so they said there's going to be a storm* (Tonga, female villager, aged 35-45 years, through an interpreter).

Wind

Changes were noted in both countries, concerning the behaviour of the wind before a cyclone. In Tonga, the direction of the wind is particularly important and provides both long and short-term warning:

> *She said the other sign. Do you know the last day of December? If the wind blow from the south, long ago they said there will be a cyclone on that year* (Tonga, female villager, aged 35-45 years, through an interpreter).

Wind blowing from the northwest is a sign of a cyclone on 'Uiha island in Tonga, and if the wind comes from the north, there will also be higher waves accompanying the wind.

The regularity of strong winds was another sign described in Tonga:

> *The one thing I heard from the old people. If you are going to have some wind every year, it's good…or after two years or three, it's good. If we can't get some wind after 10 years in between, you can ready for the big cyclone coming* (Tonga, male villager, aged 35-45 years).

In Fiji, it was simply the building of wind during the cyclone season that signifies a warning for an impending cyclone:

> *He knows that in Fiji there's a month for hurricanes from December to April, so he knows during that time that if strong winds keep on coming, there will be a cyclone very soon because it's the season for cyclone* (Fiji, male villager, aged 60+, through an interpreter).

Clouds

The community members in Tonga described particular shapes of clouds as being a warning sign: "*He said about looking at the cloud in the sky, there is like a horse tail*" (Tonga, male villager, aged 45-59 years, through an interpreter).

Spiders

Spiders were described as making more webs before a cyclone comes:

> *Many different things that the old people learn from. You know the spider, they say the spider when we are going on the road in the bush, trees from trees, the spider make their net between trees and trees. That is one of the thing that the Tongan people said that the spider try to get good to get ready for the next season. There must be a hurricane or strong wind or something like this* (Tonga, male villager, aged 60+).

Chickens

In Tonga, the behaviour of chickens was noted as providing confirmation of whether a cyclone that the radio warning says is approaching, will actually hit your particular island:

> *During the cyclone warning, if the chickens are flying up and sleep in the tree…if the chicken sleep down, there will be a hurricane…sometimes you know, the radio says that there will be a hurricane, but because of the direction, the movement of the hurricane, it will not come. So at the first time, come straight. So after two hours, three hours, change direction so it will not come; the same with the signs. We see the chicken is flying up and sleep there, we know it's okay. We trust that* (Tonga, male villager, aged 46-59 years).

Stars

One of the signs during 'the calm before the storm' in Tonga is in the appearance of stars in the night sky:

> *When you looking to the sky, the stars. Plenty stars in the sky, but they not look bright* (Tonga, male villager, aged 46-59 years, through an interpreter).

Coconut leaves

One villager in Fiji described how elders used to be able to see from the way the sunlight reflected on coconut leaves, that a cyclone was coming. This was particularly noted as something younger people do not know how to do.

5.3 Regional and local signs

It is possible that some of these signs might be closer to folklore than actual traditional knowledge. Certainly there have been controversies in the past regarding the interpretation of Pacific Island culture from anthropological studies, such as in the case of Margaret Mead's studies in Samoa (Shankman, 1996). The signs documented in this study have not been validated using

methods that give them currency in Western scientific knowledge, although it may be argued that traditional knowledge should not be subjugated by Western knowledge in that way. There are, however, initial indicators of validity.

The reliability of these traditional warning signs of cyclones is supported by the strong consistency between Fiji and Tonga in the descriptions. Local variations are to be expected, since the ecological systems on which the signs are based are not identical on the two islands. However, while sometimes the details differed, and there was an overall greater number described in Tonga than in Fiji, for some signs, the consistency was remarkable. This is further supported by a recent documentary made by the United Nations Educational Scientific and Cultural Organization (UNESCO) during a project in the Cook Islands looking at traditional warning signs of cyclones in that country (UNESCO, 2011). In that documentary, some signs were broadly similar such as the shapes of clouds, direction of the wind and changes in the tides. There were other signs that were described almost exactly as in both Fiji and Tonga – a particular bird seen only prior to a cyclone, curled new growth on banana plants, fruit growing in bunches, and chickens cooping at ground level. This suggests that there may be some signs that are common to South Pacific islands, and others more localized.

5.4 Limitations of the traditional signs

It is noteworthy that in the descriptions of the traditional warning signs, people often referred to storms or bad weather, not just cyclones or hurricanes. The signs are of strong winds and rain, but in these descriptions, they were not able to differentiate between severe storms and cyclones, or between cyclones of differing strengths.

As the environment and climate changes, so too natural warning signs may change, and traditional knowledge may need updating (Kelman, 2011). In some instances, traditional knowledge may be already outdated and considered ineffective by some within the community itself (Mercer et al., 2007).

The signs described here were considered to be current and reliable by those who held the knowledge. The risk in these communities was more in the limitations of interest in retaining that knowledge.

5.5 The future of traditional knowledge

There is a perception among some of the elders in the community that younger people on the island don't know traditional signs and are not interested in learning about them:

> *Most of the younger generation now, sometimes they don't trust what the elders say about the natural signs, because of what they know now. Because they are more educated than the elders, and you know, technology, it seems like they don't believe in natural signs now. They are not interested in getting it from the elders* (Fiji, male villager, aged 60+).

To a certain extent, the perception of the elders was supported by the interview data, in that in Fiji younger community members (aged 45 years or less) nominated only one type of traditional warning sign - the *manu ni cagi*, and thought the radio was more reliable. However, most of them still nominated the traditional sign first, with the radio viewed as providing confirmation of the traditional sign. In Tonga, again it was elders who provided both the greatest number of signs, and the finest level of details. There, villagers were equally like to first nominate the radio only or the radio together with a traditional sign. People trust both types of signs, and opposite to Fiji, view the natural signs as confirmation of whether an approaching cyclone will impact their particular island or not - the radio tells you a cyclone is in the area, but the natural signs tell you whether it is coming to your island.

A discussion with a class six school group (upper primary) in Fiji yielded a long list of traditional signs. While there was not as much detail provided as by the elders, the sheer number of signs the school children knew about was both impressive and surprising, given that the elders had said young people were not really interested in traditional knowledge. It is not clear whether this topic may have been recently studied by the school class.

The implication here is that younger people are content to rely on the radio to provide cyclone warnings. However, relying on technological warnings can be difficult on remote islands, where communication is unreliable. The Red Cross in Tonga in theory telephone each Town Officer in their area when there is a cyclone approaching, to make sure the warning is received. However, that doesn't always work:

> *Sometimes the network isn't good in the outer island, so we can't call through. The only thing they hear is the AM radio. So if the radio doesn't have batteries, they will not hear. That is how difficult the connection through to the outer islands…sometimes it's no good. And if I don't reach to them to the Town Officer, and that village, that island don't have any radio or their battery is gone, I feel sorry for them. The cyclone hit without any warning. That's how difficult through the connection or warning for the cyclone* (Tonga, aid organisation representative).

Even if there are working radios, people may not be listening to them. This is especially the case with younger people:

> *But to listen to the radio to get the warning, it's not happening with the youth. They are not listening to any radio, they are listening to music (on their mobile phones). They just respond when their family starts telling them OK, it's a cyclone* (Tonga, aid organisation representative).

This is reflected in the large body of work in the literature exploring the changing nature of youth culture and the way young people use media (Smaill, 2008). As mobile phone technology has spread in developing countries intro rural and poor communities, the technology is increasingly being used by development projects and even community radio stations as a way of engaging with youth (Watson, 2012).

In both Fiji and Tonga, aid organisations talked about these changes in the ways young people are using the radio - listening to music on their mobile phones more commonly now, rather than listening to the radio. This means that the radio is at risk of becoming a less effective method of disseminating disaster warnings, particularly to remote communities. In Tonga, the problem is recognised and is being addressed in a very modern way. There are only two mobile phone carriers in Tonga, and the network is used extensively by local businesses for advertising through text messages. This has been taken advantage of with the same system now also being used to send text message warnings of disasters. It was tested successfully for the first time during Cyclone Jasmine in 2012 to send warnings throughout the main island of Tongatapu.

5.6 Conclusion

Although there is a heavy and increasing reliance on the radio for receiving warning of an approaching cyclone, the traditional knowledge of cyclone warning signs was impressive on both islands, with remarkable consistency between them. The ways in which this local knowledge combines with external knowledge and improvised responses in the Pacific has been noted (Lauer, 2012). With an almost unanimous agreement within this study that preparation is key to surviving a disaster and minimising damage, adequate and accurate warning is essential. Properly acknowledged, preserved and formalised, traditional knowledge has the potential to combine with technological warnings and overcome some of the impediments to warnings being recognised, taken seriously and acted upon. Locals understand the natural signs, and the understanding may be passed on to those younger people who currently do not have the same knowledge. They are considered to be reliable and consistent, and when combined with the radio and mobile phone warnings, are able to overcome the problem of the mistrust of warnings coming from a single source. In fact given the range of natural signs, both in terms of which part of the ecosystem the sign emanates from, and the temporal scale of it, the traditional knowledge already may provide multiple sources for the warnings.

Combining them with the technological warnings formalises that with the advantage that the multiple sources would then include both types of knowledge – traditional and western scientific.

Traditional knowledge is being held mainly by elders, and younger people are relying more on technological warnings such as through the radio, so it is important that those technological warnings keep up with the changes in the ways young people, even on remote islands in developing countries, use that technology.

With mobile phone reception on these remote islands being dependent upon standing under the right tree, or on this particular rock however, the importance of traditional knowledge is likely to remain for some time to come. The evidence from this study shows that these warning signs are not only accessible to the local people, but also reliable and consistent, even across countries, which is crucially important for their acceptance. The integration of traditional and western scientific warnings brings the two worlds together - the wisdom of the elders and the methods of the younger generations. Their integration may also help to reduce the vulnerabilities inherent in each system. Western scientific warnings are able to provide information about the likely severity of an approaching cyclone, but are often unreliable concerning the actual location, given the unpredictable behaviour of cyclones. Traditional knowledge can warn of a cyclone or storm on a particular island, but not identify anything about the severity of it. People on each of the islands were already informally integrating the two systems by using one as a validation of the other. These remote islanders may be people ahead of their time, displaying flexibility and adaptive capacity.

Chapter 6 - Disaster aid and relief

The Pacific is the most heavily aid-assisted part of the world in terms of aid per person (Connell, 2010). Despite this, the area has been found to be under-prepared to deal with climate change impacts, with limited community awareness and buy-in to adaptation initiatives (Nunn, 2012). As discussed in Chapter 9, the communities in this study definitely had awareness of environmental changes impacting their daily lives. Links to climate change awareness were less evident however, and adaptation strategies that did not seem to be of clear and immediate benefit to them had little support from the communities. Nonetheless, while establishing a lack of preparation for climate change, and problems with aid investment and implementation to date, Nunn notes: "It is difficult to estimate the amount of aid that has come into the region in the past 25 years for climate-change adaptation and mitigation, but it has probably been several hundred million US dollars" (Nunn, 2012, p37).

Regardless of the actual amount, the report recommends changes in the way aid funding is allocated and implemented, calling for international donors, regional organisations and governments to make greater efforts to ensure the effectiveness of their assistance and initiatives, and for local influential people at the community level to be empowered to make informed and sustainable decisions (Nunn, 2012).

This chapter looks at aid around the disaster management cycle, in terms of current implementation and effectiveness. Suggested changes for the future are addressed in Chapter 10.

6.1 Examples of aid provided

The community, aid organisations and government representatives listed examples of the types of aid provided after disasters. Predictably, given the difference in aid organisations attending disasters on the main islands and on remote islands, there were fewer examples provided by those on the remote islands, than those on the mainland.

Community members recalled items such as kumala (sweet potato) seeds or plants, food rations, tarpaulins, pots, eating utensils, sleeping bags, water, water containers, clothes and housing. Aid organisations and government representatives added other items such as blankets, water purification tablets, soap, hand sanitiser, hygiene packs, school kits, first aid kits, water filters, gardening tools, cleaning tools, fuel for lights, condoms, mattresses, and in the 2012 Nadi floods nappies and milk for infants. Some aid organisations spoke of distributing whatever was donated. Sometimes there are 'cash for work' programs designed to help communities restore livelihoods and increase resilience. Examples of this were seen in Fiji following the 2012 Nadi flooding, and in Tonga following the 2009 tsunami, when participants were paid for a short and specified period of time (two to three weeks), for work such as re-planting their vegetable gardens, and transferring knowledge within the community.

Seeds were distributed to villagers in Tonga after Cyclone Ian in 2014, and there was both appreciation and respect shown for that aid. The head of the village disaster committee, who liaised with the government for receipt of the seeds, was conducting inspections of plantations in the community, and said that those who did not plant and nurture their seeds would not be given any more when he returned to the government for a second round of seed aid.

The villagers in Fiji thought it was standard to be provided with a tarpaulin following a disaster, for temporary shelter, and that was their experience. However, that contrasts with a statement by Fiji to the 2011 Global Platform on Disaster Risk Reduction:

> Using traditional housing materials as temporary shelters during the recovery phase is more convenient and has privacy for the family than tents. The materials are readily available and no fund or very little fund is needed to erect them…Erecting houses after events for those that lost their homes will not be a problem. These homes only take a matter of days to complete (Vaniqi, 2011).

This statement is consistent with the Fijian National Climate Change Policy 2012, which lists traditional building practices as providing a level of resilience to extreme weather events (Government of the Republic of Fiji, 2012). While it may be true that *bures* do provide some resilience and protection against extreme weather events, as noted by community members in this study (see section 4.3, safe place to go), it is largely historical now. It is very uncommon for people to live in *bures* now - not one family on the island in this study did so, and it was rare to observe them in other parts of the country as anything other than tourist destinations. Interviews with government representatives did not reveal a perception that people are protected because they live in *bures*, so these statements and policies appear to be at odds with current practice of both housing and aid provision. This may represent an example of the disconnect between the formal and informal systems in Fiji, or in this case the written and practiced policies (see Chapter 7 for other examples).

In Tonga, the aid seemed to be much less consistent for different events. Families with damaged crops may be provided with free ploughing of their fields. Following Cyclone Juliette in 1973 in Tonga, the government offered short-term work visas for New Zealand for a limited number of men from affected villages, so that those chosen could work in New Zealand to raise money to repair damages. Tongan villagers also spoke of the Health Department providing vaccinations following one cyclone with severe flooding, but not after similar recent events.

For the villagers, food rations and housing were definitely the focus of aid. Despite free disaster relief housing beginning in 1973 in Fiji (Campbell, 1984), it was perceived as being a new system to the elders in the village:

> *Government is giving new houses to the villagers. That's a new system. If the village goes, the DISMAC comes in and counts the houses. The number of houses that's damaged, that will be replaced* (Fiji, male villager, aged 60+).

The types of houses provided have changed in recent years, and this change was noted by the community. It was generally felt that the older ones were better equipped, including a toilet, but the newer ones are better constructed. A government representative outlined the differences and how they came about:

> *Right now we are constructing houses that cost us about $15,000 just for the material cost, excluding the labour cost. The government also pays the labour, so in total it's about $20,000 per house. The standard housing structure is 24x16ft wooden structure without toilet and bathroom…Before government was assisting with Cyclone Ami there were three phases - the first we built 24x16 houses with toilet and bathroom, after that when government want to minimise costs, so they constructed only the house and the communities' contribution is to construct a toilet* (Fiji, government representative).

The system for the provision of housing aid in Tonga was more complicated and less consistent than in Fiji. Food was clearly nominated as being a higher priority for the government in Tonga than housing aid, which is entirely dependent on donor funding. There is supposed to be a policy in place that the government should help anyone whose house has been destroyed. However, if donor funding is not available, this may not always happen. When housing aid is provided, sometimes the recipient has been asked to contribute towards the cost of it. For example after Cyclone Isaac in 1982, families were asked to pay TOP700 which represented about 20% of the cost of re-building the house. This policy is not consistently applied though, leading to confusion and uncertainty in communities.

Following the most recent cyclone in Tonga, Ian, there were at least four aid organisations providing housing aid - Red Cross, LDS Church (for members), Caritas (for members), and the World Bank project which is being implemented in conjunction with the government. None of the programs seem to include requests for financial contributions from the recipients. The World Bank project, which is being modelled on their response in Tonga to Cyclone

Waka in 2001, includes repairs for housing and key community facilities using a combination of contracted labour and 'supported self recovery'.

The examples provided above are of aid that is targeted towards addressing need, and is beneficial to communities. There are other examples however, of aid that achieves neither of these aims. Following Cyclone Ian in Tonga, there were reports of inappropriate and unhelpful aid to communities. The government provided food aid to communities in Ha'apai on two separate occasions and both times, the food was unfit for consumption. In February/March, food aid was received that included tinned fish which people reported as being 'expired', and that made several people ill. Tins spontaneously burst open, and most people either threw them out or fed them to their dogs. In April/May, rice was received that did not absorb water during cooking, and again left people ill. Many reported that the expiry date on the bag, which had passed, was covered by a sticker with a new, future, expiry date. Complaints to the government about this were numerous, and I was told that the Government's explanation was that the rice had not expired, just the bag itself. These reports from the community are supported by media articles (e.g. Radio New Zealand International, 2014; Radio New Zealand, 2014).

In an unrelated example, water tanks were donated to the community on 'Uiha island. Households were surveyed to establish who needed them, and when there were more tanks available than required, the extras were simply delivered to households whose tanks showed the slightest sign of wear and tear, even if they had indicated that they did not need a new one. This is despite some in the community requesting septic tanks instead. It is likely that there were no septic tanks available, which is understandable, however, this is an example of the less than optimal outcomes achieved when particular aid is delivered before the need for it is established.

Although not widely recognised, or perhaps openly acknowledged, a few respondents talked about the benefits of aid, outside of fulfilling humanitarian needs. Some community members in Fiji talked about the virtual transformation of their island since Cyclone Ami in 2003, when more than half of the houses on the island were destroyed:

> *It's a big thing that they have brought into this island is the houses that they have there. Without that I don't think so that they can afford to have one* (Fiji, female villager, aged 60+).

Similarly in Tonga, some community members talked about the housing aid 'beautifying the village'.

One aid organisation representative in Fiji described disasters as presenting governments with an opportunity to 'score points with communities'. The ways in which this was seen to manifest itself were not elaborated upon, but are likely to include favouritism for certain communities in the prioritisation, timing, amount or type of aid provided. A Fijian government representative pointed to such behaviour as having occurred during Cyclone Ami in 2003, and there was some mention of this in newspaper reports at the time.

6.2 Corruption/favouritism

Several distinguishing features of humanitarian assistance that make it vulnerable to corruption have been identified including:

- Pressure to act quickly and be seen to be doing so;
- Going to places such as disaster zones, where local or national infrastructure has been destroyed and
- The rotation of senior staff because of the stressful nature of the work (Maxwell, Bailey, Harvey et al., 2012).

Similarly, where opportunity to influence decisions, the existence of obtainable benefits and the possibility of remaining undetected coincide, there is a risk of corruption. This risk is likely, especially in emergency situations where financial controls are relaxed to speed up the process, aid organisations have a pressure to spend their donations quickly, and there are new players in an unfamiliar setting (Schultz and Søreide, 2008).

There is a sense from all groups in this study that aid is not necessarily assigned and distributed according to need, and that not all aid makes it to the destination communities. Aid organisations recognised that corruption and favouritism do take place, in various forms - greed within the government, aid organisations favouring their own communities and helping those they know first. Monitoring and evaluation is weak, so it is difficult to distinguish between poor governance and actual corruption. Few aid organisations have the bureaucracy and systems in place to be able to track their donations, and even where those data do exist, they are rarely analysed.

From the perspective of the community, it is the government systems and employees at fault:

> *He thinks that sometimes there's a difference between the teams that come over and the information given back to the government* (Fiji, male villager, aged 60+, through an interpreter)
>
> *Like when the aid comes in, it doesn't go straight to the certain place that it has to go to. Only half of it will go. The rest will be shared amongst themselves* (Fiji, male villager, aged 60+)
>
> *I think the government is the first aid for the cyclone. It's not aid for… sometimes they have aid for another people or some people who have a lot of foods. But the poor people not have* (Tonga, male villager aged 45-59).

While in Tonga some community members did question the integrity of the Red Cross, the focus of blame for corruption in both countries was on the government. There is a view within both communities that they would be better off if donors and aid organisations came directly to them, rather than going through the government. This may be similar to the situation for more easily accessible communities on the main islands in Fiji, although it seems that the islanders are not necessarily aware of the huge number of aid organisations working directly with those accessible communities (see Chapter 7).

The perception does seem to be about making the system fairer, rather than trying to get more aid per se.

With the mixed views within the community in Fiji about whether or not the current role and responsibilities of the *turaga ni koro* work well (see Chapter 7), there are differing opinions on whether the *turaga ni koro* was a source of or potential answer to such corruption. Some blamed the *turaga ni koro* for being directly responsible for some of the corruption and favouritism, while others thought that the system would be more fair if the *turaga ni koro* was able to follow through the entire process, having a copy of assessment reports, and overseeing the allocation and distribution of aid. The longer the supply chain is, the more opportunity there is along the way for corruption, and it is those on outer islands for whom the chain is longest.

Another view of the sources of corruption and favouritism, and its consequences was provided by a government representative in Fiji:

> *The dependency and the level of expectation has really increased over the years. I would say this is where also politics come into play as well. We've had disasters in the past where a lot of political parties came in and did their own relief supplies and whatever to gain political mileage. This has raised the level of expectation. We've had some disasters where cash was given. These are what previous governments did maybe to please the people, but now it has changed the mindset of the people* (Fiji, government representative).

Reference to political parties distributing aid has been made elsewhere. Political influences in disaster aid decision-making have been established in both the United States of America (Stramp, 2013), and India (Cole, Healy and Werker, 2012). The political motives of the Tongan government response to Cyclone Ian have been questioned, with suggestions that relationships with New Zealand and China, and the timing of an election in Tonga within 12 months of the cyclone, have all affected the Tongan government's response (Brown Pulu, 2014).

The impacts of this affect aid long before it has reached communities, especially on remote islands. Issues such as whether or not containers of aid are charged various types of transportation fees and taxes, which aid organisations are allowed to bid for aid funding, and when and to whom government-to-government requests for assistance are made (Brown Pulu, 2014) will usually play out on the remote islands simply as more delays.

6.3 Crime

Particularly in a developing country, when there is a sudden influx of money floating around, crime will follow. Disasters present a temporary boon for opportunistic crimes, and many examples were provided by aid organisations and government representatives. Community members stealing from flooded shops, shop owners selling damaged goods, aid distributors stealing aid, villagers stealing crops from neighbouring plantations, assaults, and even police stationed as security succumbing to temptation. There have been newspaper reports from previous cyclones in Fiji, of these types of crimes (e.g. Fiji Times, Saturday 18th January 2003, p3 and p34; Fiji Times, Wednesday 17th March 2010, p5; Fiji Times, Friday 19th Mach 2010, p5). This not only adds to the disaster itself, but takes police and other officials away from disaster relief work, to prevent and respond to crime. While sufficiently detailed crime statistics were not readily available to allow for verifying whether or not an increase in crime levels actually took place, authorities seem to be responding in kind regardless.

Security in Nadi after the March/April 2012 floods was high, with access to the town itself blocked by security officers. Aid organisations spoke of soldiers accompanying aid distributions to provide security for those distributions, and of people refusing to leave their homes during a disaster for fear of returning to find their home looted:

> *I heard stories of a family in Nadi and the husband wouldn't leave because he didn't want the house to be looted, and he couldn't swim. And in the end he was on a table with his chair on his table, and the water came up to about his chest. Then it went down again and he was*

> *fine, but another four hours of rain and he may have died* (Fiji, aid organisation representative).

The Governments spoke of communities making fraudulent claims for aid or dismantling houses to qualify. "*It means that stealing is all over, at every level*" (Fiji, aid organisation representative).

On the remote islands in Fiji and Tonga, people were generally much less forthcoming about crime and conflicts within their community after a disaster. Many people simply refused to talk about the issue, shutting that line of questioning down with an adamant - 'I have never seen anything like that'. Some, however, did acknowledge rising levels of tension and aggression in the disaster aftermath, especially if expected food aid was late in arriving. It was agreed in Fiji that it was up to the *turaga ni koro* to act as peacekeeper, but that it was rare for tensions to spill over into physical aggression in their small, isolated community: "*They don't find any trouble, because if you want to make trouble here, where else can you go?"* (Fiji, male villager, aged 35-45 years).

When outright theft was acknowledged, it was presented as opportunistic crime stemming from laziness rather than desperation:

> *After the cyclone, those people they don't plant food, they go and like a thief there, they go and pull out the food. That's the worst thing* (Fiji, female villager, aged 35-45 years).

In Tonga, where acknowledged, it was considered not to be theft if the culprit owned up when asked, "*they are forgiven because everyone is family anyway*" (Tonga, female villager, aged 35-45 years).

6.4 Prioritisation of aid

The theory of how aid is prioritised, and the reality of its distribution do not always meet. Government representatives confirmed that the National Disaster Management Office (NDMO) in Fiji gets information from the district and divisional offices about the needs in communities and evacuation centres. An initial damage assessment is done as soon as possible after the event, and this

determines immediate needs such as food aid. A detailed damaged assessment follows, for housing and infrastructure needs.

Aid organisations try to attend to the most affected areas first, and donors try to align their funding with existing programs to maximise efficiency and effectiveness. Some aid organisations in Fiji work outside the NDMO system, and prioritise their efforts based on their local areas, and reports in the media and from other aid organisations about where aid is being distributed.

No system is perfect, and in the chaos that inevitably ensues following extreme weather events that turn into disasters, with transport and communication disrupted and affected communities isolated, it is perhaps to be expected that there will often (or even always) be difficulties and mistakes made with the prioritisation of help. People on the island in Fiji talked about inconsistencies in the prioritisation and distribution of aid. Some people thought that everyone should receive the same aid, regardless of need. It was very difficult to tease out the exact reasons for this, given that there was also recognition that there should be a focus on those most in need. It seems that the idea of equality in aid is in response to the inequalities and perceived favouritism inherent in the current system, which is supposed to be needs based but does not always end up that way in practice: "*That's what I'm asking. If there is the same damage, why can't they give the same to us?*" (Fiji, male villager, aged 46-59 years).

There were examples provided by community members of inconsistency in the approach of the prioritisation and distribution of aid. This community had been through both Cyclone Ami in 2003, which devastated the island and Cyclone Tomas in 2010, in which a small number of houses were affected. The inconsistencies mentioned were in the receipt of both food aid and housing reconstruction assistance:

> *Like on Ami, when they come in, they count each person who lives in the house and the total population. Then they divided the ration per head for each individual person. In Tomas, only the families were counted, they did not count how many people were in the family. They*

> *just counted the families and then gave it out. So in most families there were a lot of people there, because the families were given the same amount of rations. So in a bigger family it was not enough* (Fiji, male villager, aged 46-59 years)

> *Like when the government, they come and we can't change that, because the government has decided when they come into the community, we can't change it. Because the community knows what is happening, maybe that house was fully damaged and this one partly damaged. The partly damaged one, they give the full house, and the fully damaged one, they give the part house* (Fiji, male villager, aged 46-59 years)

But within the island, there was no consensus on what would constitute a 'fair' system. The three different viewpoints presented by various community members were for aid to be distributed according to need, equally per person, or such as in this example, equally per household:

> *Some of them want more. Like if there are five tinned fish, and a big family is given three because there are so many of them, and the other family they have two. That is unfair to the others, when the cyclone, it came to everybody. So why three to them and two to us? So it's a bit unfair too. That's how they are kind of greediness develops…It shouldn't be shared like more to the plenty people in the house. It should be shared equally amongst everybody* (Fiji, female villager, aged 35-45 years).

The sentiment that aid should be given to everyone equally regardless of damage was echoed in Tonga, during a discussion about the provision of aid in the form of cooking utensils:

> *Because we all live here, we all went through the cyclone, and whether your house is broken or not, we all feel sad in our heart. Aid giving something helps people*

> *to feel a bit happier* (Tonga, male villager, aged 35-45 years).

This seemed to be making a clear distinction between housing aid and other types of aid. However, talking about housing aid specifically, it was clear that some of these ideas arose out of a frustration with the inconsistencies in their experience of aid from one cyclone to the next, and that tensions and conflict within the community result:

> *And when the helps come, just help those who are, who have been their whole house has been blown away. And the ones who just the roof or just one to two tins blown away, sometimes they give the roof, sometimes they not. You know, some of them, they will feel sad* (Fiji, female villager, aged 35-45 years)

There was a sense that distribution according to need is great in theory, but is not always translated into practice, and so simply allocating equally within the community would be fairer. From the perspective of the aid organisations though, this was about greed, not equality:

> *When I'm looking at that, people are looking at the wants too, not the need. The completely destroyed one, that's a need. The partly is a want. My house is completely damaged, and that's a need for me. And her house is not, and she really wants her house too to be given the whole package, even though she didn't suffer as much. That's greediness* (Fiji, aid organisation representative).

Rather than moving towards the system many members of the community seemed to be asking for, aid organisations extend the concept of 'need' from just an assessment of the damage sustained, to be inclusive of aspects of the resilience of the affected family:

> *I also remember that after the floods, there were those who had received food bags, but they had a full time job and things. But there were those who were left out* (Fiji, aid organisation representative).

At the village level, where there is a clear expectation that everyone will help each other in the aftermath of a disaster, these types of resilience factors are likely to be viewed at a community, rather than individual, level.

From the perspective of the community, questions around prioritisation and distribution of aid link directly back to the issues of corruption and favouritism. While for the aid organisations and government, prioritisation of aid is usually about which communities to attend to first and for what aid, at the community level, it is about which families receive what aid. It almost felt as though the prioritisation of aid stops at the village level for the suppliers, but that is precisely when it begins in earnest for the individuals in that village.

Few villagers expressed recognition of the fact that aid is being delivered to an affected area usually much larger than just their island, either in terms of delays in getting aid arriving, or in the amount available.

In Tonga, there were fewer problems with inconsistencies in the distribution of aid, with a per person method used each time. However, there were issues not dissimilar to Fiji, around differences between what is seen to be needed and what is delivered:

> *It will happen that it is not fair enough. Because they have a survey about how many people in your family and I say 10 people in my family. But when they write, only two or three. When they share the aid, share it for what they put in their paper, but not in the people who live in the home. That's the main thing. Sometimes the people it is not fair to them* (Tonga, female villager, aged 35-45).

These inconsistencies in receipt and allocation of aid impact upon expectations and perceptions of equity and fairness. A good example is provided in the responses on Druadrua Island in Fiji to Cyclones Ami and Tomas.

6.5 Differences between Ami and Tomas responses

Cyclones Ami in 2003 and Tomas in 2010 were very different events, with very different responses. Cyclone Ami devastated much of the Northern Division of Fiji, and Druadrua was considered one of the worst affected communities. More than half of all houses on the island were destroyed in that cyclone, and in one village there were only two houses remaining. The infrastructure damage to transport and communications systems was substantial, and impacted greatly on the response from the government and aid organisations' perspective. The bureaucracy in place was slow and cumbersome and so was the response. The system was considered to be too centralised, with decisions made in Suva taking too long to filter down into action on the ground, issues which were reflected in several newspaper reports at the time (e.g. Fiji Times, Friday 17th January 2003, p2 and p6; Fiji Times, Saturday 18th January 2003, p3; Fiji Times, Saturday 19th March 2003, p2).

From the perspective of the community on the island, however, the response to Ami was unexpectedly prompt and generous. The Prime Minister's helicopter landed on the school oval, and the attention of Fiji was firmly placed on Druadrua in the first couple of days after the event (e.g. Fiji Times, Wednesday 15th January 2003, p5; Fiji Times, Thursday 16th January 2003, p2; Fiji Times, Friday 17th January 2003, p3; Fiji Times, Sunday 19th January 2003, whole front page and p3). The reasons for this are multiple. Firstly, the community was devastated. But perhaps more importantly, they were the only village to be able to communicate with DISMAC before all communication systems failed, and their message said that there were two children missing. It is not surprising that the response was swift and impressive.

This clearly set up expectations within the community, and several people expressed disappointment and frustration that the Prime Minister did not come to their island after Cyclone Tomas. This is despite the fact that Cyclone Tomas left only two families homeless on the island, and its more destructive impacts were felt elsewhere. When pushed, most (although not all) villagers conceded that they were not left in need after Cyclone Tomas, and that the difference in response was fair.

Most people on the island attributed the difference in response to the change in government rather than the impacts of the two events:

> *He thinks that the Cyclone Tomas didn't do much damage, but still thinks that the ration was not enough compared to the damage that's been done. He thinks that it was the government, because of the changes in the government, changes in the way they look after that* (Fiji, male villager, aged 46-59, through an interpreter).

Villagers spoke of their disappointment with both the aid provided after Tomas and the time it took to arrive. After experiencing aid turning up only a few days after Cyclone Ami, there was considerable frustration when less aid took two to three weeks to arrive after Cyclone Tomas. This has left a number of villagers with the impression that aid cannot be relied upon, and is inconsistent - that you do not know how long you will have to wait or what you will get, so you are better to be self-reliant.

This contrasts with the perspective of the aid organisations and government representatives, for whom the response to Tomas was vastly improved since the lessons of Ami were taken on board. They too attribute this partly to the change in government, but in a positive way:

> *I'm taking off my hat as a civil servant- it will be two perspectives as I answer that question. If I am a villager, I will want the response to come quickly, so I'm loving how they are doing things. Within a short time, I've got my food, my needs with them. But from my side as wearing my hat as a civil servant - hey, that's not the way to do things, we need records* (Fiji, government representative).

The quote from this government representative highlights the difficulties in reconciling the expectations of the community with those of the government.

6.6 Conclusion

Most of the issues raised here are similar to those found in another study involving interviews with aid organisation representatives and communities, specifically about corruption in humanitarian assistance around the world. Maxwell and colleagues found preferential treatment in assessments and distribution and a lack of formal complaint mechanisms, as being common issues. Communities perceived the corruption as being a problem because it led to decreased access to aid and other resources. Aid workers saw also the potential impact on their future fundraising and programming capabilities (Maxwell et al., 2012).

The communities perceive themselves as relatively powerless, with the assessment teams making decisions and recording information that may not always reflect the villagers' reality, and aid not always matching need. Particularly in Fiji, the lack of integration between the formal and informal systems contributes significantly to this, with the government seeing their responsibility for equity and fairness end at the island shore, where the informal systems take over. There seems to be a separation in the governance of the formal and informal systems, especially between the different levels, with the level furthest from the capital – the remote islands – lacking scrutiny and integration between the formal and informal systems. This is less of an issue in Tonga, with village committees and the greater involvement of the government and military in the distribution of aid. It is probably no coincidence that complaints from the villagers of inequities and favouritism were more evident in Fiji than Tonga.

Conversely, if the reported lack of crime after disasters on these islands is true, this seems representative of the positives of remoteness with stronger community bonds diminishing the need, motivations and opportunities for crime.

Chapter 7 - Governance and co-ordination

The governance arrangements in both Fiji and Tonga are multi-layered - with four to five layers from the national through to local level. In Fiji they are the national, divisional, provincial, district and village level. Alongside the formal structure, also sits the traditional structure for *itaukei* or Indigenous Fijians, which is almost, but not quite, parallel to the formal structure. In Tonga, there are national, district (or island groups), districts within the island groups (two layers confusingly both labelled district), and village levels. Sitting alongside this is the division between nobles and commoners, which is built-into the parliament, with some representative positions designated for nobles and others for popularly elected representatives.

In each country, villages have a government representative (see *turaga ni koro*/Town Officer role section in this chapter), as well as a traditional chief. In Fiji the Chief is the head of the dominant *mataqali* or clan, and in Tonga they are related to the relevant Noble for that village. The exception to this is the small proportion of villages in Tonga that are government rather than Noble controlled. The co-existence of the traditional and formal governance structures is complex, although more so in Fiji where there are more layers, than in Tonga where roles seem to be more clearly defined.

Even within the formal governance structure, at first glance, there seem to be too many layers of government for the given population sizes of these small countries. However, they are not geographically small, and it is the sheer number and spread of inhabited islands (see section 1.2, Fiji and Tonga) that necessitates and makes sense of the multi-layered approach. The formal governance structure needs to be able to co-ordinate groups of islands within the country.

Governance in small island states has been found to be weak and urban biased, with central governments often failing to reach the peripheries or outer islands (Connell, 2010). On the more remote islands in the Pacific, traditional governance tends to dominate (Nunn et al., 2014).

This traditional governance may be a barrier or enabler of change, depending on how it is used, and how it interacts with the formal governance system. In the Pacific, it has been found to be a barrier to effective climate change adaptation with a lack of awareness of climate change in the key decision makers, the traditional structures not lending themselves to external influence or advice, and religious beliefs discouraging longer term thinking and anticipatory responses to climate change (Nunn et al., 2014). Small island communities are often under-resourced and over-committed to immediate concerns, which renders strategic long-term thinking secondary (Lane, Mercer Clarke, Forbes et al., 2013).

This chapter looks at the governance of the disaster management systems in Fiji and Tonga, and the co-ordination of aid.

7.1 National Disaster Committees

DISMAC is the common term for the Disaster Management Committee in Fiji. This is the committee responsible for co-ordination of disaster response. There is an official list of members written into the Disaster Management Act 1995. However, the operationalisation of DISMAC does not always work according to the Act, and appears inconsistent and non-transparent. There is no general agreement on who members of DISMAC are, and aid organisations spoke of 'sometimes' being invited to meetings. The number of aid organisations has increased since 1995, and some who consider themselves members of DISMAC were not even doing disaster response when the official membership list was drawn up.

Similarly in Tonga, the running of the equivalent committee - the National Emergency Management Committee (NEMC) is not always according to the legislation and standard operating procedures. This results in a lack of clarity in the chain of command, and a less coordinated response. Aid organisations are not sitting members of the committee, but a government representative said they were 'normally invited'. The Red Cross until a couple of years ago were routinely invited to meetings, but this recently ended. There are a number of committees (including the NEMC and a National Emergency Operating Committee (NEOC)), with broadly similar membership.

In practice, this can mean that the extra members of the second committee miss out on what becomes assumed knowledge among those who sit on both. Once the NEMC is activated, a Controller is appointed to run the operations. This position is not designated, but decided each time. This is convenient in terms of not relying on one person alone, but possibly not an advantage in terms of the smooth running of the emergency response.

7.2 Governance

The basic governance of the post-disaster aid system in Fiji and Tonga is very similar. Following a hazard event, an initial assessment of damage is completed and reported to the relevant disaster management committee. At around the same time, aid organisations such as the Red Cross are likely to do their own assessments of immediate needs and provide non-food aid. The initial damage assessment is then used to inform the allocation of food aid. A second, more detailed damage assessment is completed later by the government, which will then be used as the basis for allocation of infrastructure and housing aid.

The contrast in the perceptions and views of the community and the government in Fiji in relation to issues of governance and co-ordination of disaster response was significant. For the government, the biggest concerns were around information management and the co-ordination of aid organisations. Where aid organisations work outside the DISMAC system and do not co-ordinate with government, keeping District and Divisional Emergency Operation Centres (EOCs) informed of where they are distributing what aid, the task of prioritisation of aid and ensuring that all needs are met becomes very difficult. Effort and resources are duplicated leading to wastage, while other communities miss out or have their aid delayed. Responses that were thought to have worked well were those where there was more information sharing and co-ordination between agencies:

> *Each of the agencies are getting their information through their own sources, but when we come together as one group, we are able to give a detailed briefing of what is happening in the division, what is the national response like, what are the needs in the communities and then we prioritise. I think that was one of the strengths that we did in Tomas. It was the synergy, the co-ordination. This enabled us to do our responses more efficiently and effectively* (Fiji, government representative)

From the point of view of the remote island community interviewed in Fiji, having aid come directly from aid organisations, without the involvement of government would be an improvement. They perceive that aid would be delivered more quickly and more fairly than in the current system. Many of the newer aid organisations, which are often the ones working in isolation from the government and DISMAC system, have moved into the disaster response space reflecting the frustrations and concerns of communities who view government aid as being slow:

> *Government has got what is called immediate responses at the height, and then after that we wait on assessments. It's usually during that period when people are uneasy, when people are demanding. We are talking about taxpayers money here. There has to be some assessment made and then government has to provide the relevant, appropriate funding. I think it's this lack of understanding of the systems and processes involved that frustrates people more* (Fiji, government representative).

The problems created when the number of aid organisations increases and the information flow does not necessarily follow, were recognised even by one of these newer players. When donors and aid organisations assume they know what the needs of the communities are, rather than waiting to ask and find out about each particular community, waste results.

The perceived inequalities in aid that is delivered through government was just as significant for the community on the island as the delays (see Chapter 6). Aid being directly received from the aid organisations was the suggested solution to this problem - "*because when it comes back from the aid to the government, that's where the help is not fair*" (Fiji, female villager, aged 35-45 years).

Currently in Fiji there is an increasing number of aid organisations doing exactly what is being asked for here – bypassing government and delivering aid directly to the community on the main islands. The view of this community seems to clearly reflect an isolated island, rather than a community on the main islands. With few aid organisations ever travelling to remote communities, and certainly not the ones who are operating in isolation from the government, isolated islands have little or no experience of the main islands' race to be the first and resulting duplication and waste (see section 7.3, co-ordination issues). Where duplication and waste occur on the remote islands, it is more likely to arise from the distribution system and local governance than co-ordination and national governance issues.

At both the aid organisation and community levels there was a lack of clarity around exactly what the governance and structural processes were for disaster response. While government representatives said that everything was very clear and laid out in legislation, this was from 1995, and a number of agencies that viewed themselves as being included in the structures and DISMAC, were not in operation in Fiji when the legislation was written.

> *Fiji doesn't really have a structure that you can look up to see how it all works, it's all in the mind of the key players because it's, the structure that's in writing is outdated, and the structure that they are operating on is not written down. But it's understood by a number of people in key positions because they've had so many floods and cyclones lately* (Fiji, aid organisation representative)

The structure is complicated with so many levels of players involved, especially in Fiji where regional organisations are all represented. There is the household or village level (e.g. individuals donating to particular families from having viewed media articles); local (e.g. resorts cooking and distributing meals to the local villages), district level (e.g. aid organisations working in their local area); divisional (often the focus of a disaster where its affects are mainly within one division, which is similar to a state or territory in Australia); national (e.g. NDMO) and regional (e.g. United Nations Agencies, international donors).While not all the players listed in the examples above are or necessarily should be part of the formal structure, they all directly impact the disaster response and co-ordination task in various ways. This means there are issues of integration - a lot of stepping on each other's toes and territory.

The differences between the paper version of the structure and processes and the in practice version were stark. There are multiple agencies that try to take on the role of co-ordinating aid organisations, to more or less formal degrees. Inevitably, that results in multiple groups of aid organisations, each with different co-ordinating bodies, and no central repository of information and co-ordination. Some will have better links with the NDMO than others. Some make more attempts to keep DISMAC informed than others. Some co-ordinating bodies see it as their role to liaise with DISMAC, others rely on having a number of their aid organisations doing that for them and passing on information.

Perceptions of control and status are important. Being seen to be doing something and responding after a disaster is critical to government, and so it follows that they would not want to be seen to be losing too much control over the responses. However, the "hero factor" is also great public relations for organisations interested in growing their membership (e.g. church based organisations), or profits (e.g. companies and businesses), and competing for funding (aid organisations). So there may be little motivation for some of the aid organisations to better coordinate with DISMAC and the NDMO, if they see that as a threat to achieving some of their goals in doing disaster response.

Having their response slowed down by linking into the bureaucracy may well threaten a goal of disaster response as a public relations exercise, even if the humanitarian goals are better achieved in this way.

Even among aid organisations with no obvious ulterior motives in doing disaster response, the history of fraud and corruption around aid has led to suspicions that for example, not all aid delivered to the affected areas is actually distributed to affected communities. For reasons such as these, working independently of the government is seen to have merits. Some smaller aid organisations talked about linking in with DISMAC and the government mainly for logistical reasons such as the cost of freight (see section 7.3, co-ordination issues for a more complete discussion of these issues).

An interesting insight into what perhaps lies ahead with more frequent disasters was provided in early 2012 with flooding in Fiji. In January 2012, large areas around Nadi in Fiji were flooded following heavy rains. In March/April that same year, there was a second round of flooding, over a larger area, but incorporating the entire area flooded earlier in January.

Most aid organisations involved agreed that the response for the second event was better than the first:

> *So what I thought was interesting was that when the first thing happened in January, which was a lot smaller I think, there was, you could see that there was nothing in place except for in certain sectors like health...But then when the 30 March floods happened, those systems were basically still in place, at least in people's minds, so it was just a matter of standing it up again...So in that respect I think the smaller floods in January were probably a blessing in disguise for the bigger floods in March-April* (Fiji, aid organisation representative)

Aid organisations reported better organisation and co-ordination of the response to the second event, with more consistent information and more reliable assistance provided. When the second event occurred, the response to the first event was not yet completed. Detailed damage assessments were yet to

be done, and the humanitarian assistance was only just wrapping up. Rather than descending into chaos however, the system showed itself to be flexible and responsive, and with the mechanisms and relationships already in place from the first event, the response to the second event was faster and improved.

In the 2012 Nadi floods, there were still, however, reports of complaints from the public that the Red Cross had received enormous amounts of donor support, and were not seen to be doing enough with it (Fiji, aid organisation representatives). Some aid organisations, not directly involved in the 2012 flood response, also questioned the use of the funds donated to the Prime Minister's Flood Relief fund. It is not clear whether these concerns are legitimate or not, and thus whether this problem is one of mismanagement, corruption or poor public relations. The complaints about both the government and the Red Cross speak to an atmosphere of suspicion and mistrust.

In Tonga, where the co-ordination of a proliferation of aid organisations is not such a problem, the governance and co-ordination issues are slightly different. Similarly to Fiji, the community in Tonga wanted aid to come directly from the aid organisations rather than going through government. Again this was the suggested answer to perceived inequities, favouritism and delays in government response. The aid organisations also noted that the formal processes and protocols in Tonga take too long, resulting in donors and aid organisations often trying to bypass the systems.

The biggest issues raised in Tonga however, were the lack of information flow (noted by the communities), the lack of clarity around governance processes (by the aid organisations) and the lack of district level co-ordination and decision-making power (by the government).

For the community, specifically in 'Uiha village, significant frustrations surrounded the issue of housing aid following flooding from recent cyclones. They said that surveys were done, and assessments of need made, but then no response was ever received from the government regarding if and when assistance in making repairs to housing would be received. Aid organisations confirmed this, saying that after the flooding, there were rumours about assistance but no formal response from the government. Government

representatives said that donor funding was applied for but not approved for those housing repairs. However, communication of this was lacking. Indeed for the community, it seemed as though it was this uncertainty that was more frustrating than not receiving aid:

> *It took a month and they just came with food, and after that they do the research and they just go and go… they thought they were going to help out with aid of housing and stuff… they thought they were going to get the help, but there was nothing… they never knew (why)* (Tonga, female villager, aged 35-45 years).

There is widespread recognition amongst community members that housing aid (indeed all aid) is very much donor dependent, but the lack of communication from the government caused great concern. Some people lived with others for over six months waiting for aid that never came, until they gave up and did it themselves. Reminiscent of the attitude to whether or not a financial contribution should be made to housing aid, the majority of community members seemed to be saying - *we just want to know what's happening*.

Aid organisations and government representatives in Tonga spoke of extensive delays and difficulties surrounding decision-making hierarchies and processes during disaster responses. This has led to simple things not happening in good time, or not happening at all, such as the writing of daily situation reports, or the loading and departure of boats with aid. Sometimes there is only one person who is authorised to approve things, damage assessors are usually sent from Tongatapu rather than using local government representatives, and at the district level, there is no formal structure for aid organisations to link in with or through which decisions can be made.

There is a cultural deference to elders and authority in Tonga that penetrates through to disaster response processes. This means that sometimes decision makers may be reluctant to take advice and those with the relevant knowledge may be reluctant to offer it. The structure and processes, and issues around their operation constrain the ability of NEMO and aid organisations to respond to disasters.

All of these issues lead to delays and frustrations for everyone involved, which then results in people trying to go outside the system to get things done.

7.3 Co-ordination issues

In Fiji there are increasing numbers of organisations entering the disaster aid arena for a number of interrelated reasons, resulting in the lack of co-ordination of aid provided. These 'non-traditional' aid organisations include for example, civil society organisations and faith-based organisations expanding their aid work to include disaster response, and corporations establishing aid and disaster response sections of their business. This issue was one of the most common concerns mentioned in interviews with aid organisations and government representatives.

Many people said that there has been an increase in the frequency and intensity of natural disasters in Fiji in a noted change from the past. This has inevitably meant that there is more concern in the community as more places are affected more often. Combined with this has been scrutiny of the responses with the greater opportunities presented by the number of events and increased media attention. This has laid the foundation for changes in the system, as has been the case in many countries around the world experiencing similar extreme weather events. The history and political turmoil in Fiji over the past decade has added specific context and complexity to this foundation. Two main factors have led to an increase in the number of organisations providing humanitarian aid after a disaster. Firstly, since the 2006 military coup, there has been a trend towards donor countries providing money and support directly to aid organisations, rather than always channelling funding through the government:

> *A lot of change have come about at the international level when the political situation in here was such, and this, from my experience have turned a lot of things. Because like Australia and New Zealand won't want to donate directly through bilateral things, so they go through NGOs. That was one thing that have increased the number of NGOs in Fiji* (Fiji, government representative)

Donor agencies confirmed that they actively provide funding to aid organisations directly, not just through the government:

> *FRANZ (France, Australia and New Zealand alliance) is usually one of the first mechanisms to offer humanitarian response, to help Fiji. Note there that I said Fiji as opposed to just the government of Fiji, so it can include communities in Fiji or NGOs in Fiji. It's not just fixed to one specific point* (Fiji, aid organisation representative).

Another factor that may be related to the political situation in Fiji is the perception among aid organisations and the community that aid after a disaster has been both too slow and liable to corruption, such that the government may not be the best provider of aid. Add to these issues the public relations gain to be made in being seen to be providing humanitarian aid after a disaster, the opportunities for which continue to increase with modern media, and it is not difficult to imagine how and why there have been so many new players in the disaster aid business in Fiji.

Given this basis, the motivations of the organisations may to some extent determine how they go about their aid provision. For larger organisations and those that have a longer term view and are involved in development work in the country as well, the benefits of being part of the DISMAC system and linking in with government and other aid organisations may be clear. Your aid is able to be part of a coordinated response, and by tapping into the information available to the District and Divisional Emergency Management Operating Committees (EMOCs) through DISMAC, you are able to be part of a whole system addressing the needs of the affected communities. For smaller organisations without funding or logistics for freight and transportation of aid out of their local area, linking into the DISMAC system makes sense as a way of being able to provide aid all over the country.

Even so, there are other situations where it is possible to see fewer advantages in linking into the 'system', and distinct advantages in opting out of it. For smaller organisations working in a localised area, where a disaster affects communities with whom they have existing relationships, it makes

sense to provide aid directly to those communities, as quickly and efficiently as possible. Liaison with DISMAC in these situations may be mostly or only to the benefit of the broader response rather than the aid organisation itself. DISMAC would gain information about what the organisation is doing and where, but when the organisation is already receiving their information directly from the community, it is hard to see what immediate benefit they would derive from making the effort to liaise with DISMAC.

Larger organisations with their own infrastructure and funding may not need government logistical and transportation assistance. Where the provision of aid is peripheral to their daily business, the motivations for providing aid may be more about responding to perceptions of the lateness of government aid distribution, and the public relations boon to be gained by being seen to fill this 'gap', than about actually fulfilling the needs of the communities after a disaster, and promoting resilience and disaster risk reduction in the longer term. This means that the other key advantage of linking into the formal DISMAC system: that of information, may not be all that attractive either. One aid organisation said that they rely on a combination of local aid partners and the media for their information about where aid is needed.

Another potentially crucial factor is that for some of the newer aid organisations, post-disaster aid is peripheral to their daily business. Outside of a disaster, there is no one working on the aid program. During a disaster response, there is little time for strategic direction and thinking, and outside response time, there is no one with the responsibility or time for this, because everyone has returned to their 'real jobs'. Staff are given financial incentives to be involved in disaster responses, but there are no positions dedicated to the program.

The net result of this is a complex system of players, big and small, with multiple motivations for being in the aid distribution field, not all of which include disaster risk reduction or community resilience. This smorgasboard of players link into the formal disaster response system to greater or lesser degrees.

As one aid organisation representative pointed out, there is a big difference between contacting DISMAC once to say - this is what we are doing - and being in regular contact, keeping them informed of your movements and work throughout the response period. The situation creates logistical difficulties for the body with overarching responsibility for the response and the welfare of the Fijian people - the government:

> *One of the issues that arise out of this non-co-ordination, is people are thinking that there is only one group that is being targeted. Because some NGOs, some other players are saying - we are going to this particular group. So some others are looking and are saying - this is unfair, all these complaints. That is why we need to coordinate, so that people are again treated equally and fairly and with respect* (Fiji, government representative).

The bigger donor agencies, such as the Australian and New Zealand governments, have 'clear expectations' that their funding recipients will work with the government and formal disaster response system. However, others do not see that as part of their role, and simply leave it up to the discretion of the aid organisation.

Everyone agreed that this current situation leads to duplication, waste and some communities missing out:

> *There are still some places that do get missed out and we hear about that later. There are some areas that are complaining that the food did not come to them, and there are some areas where they've received two packs from two different NGOs. There are some NGOs that don't follow the NDMO system and the district and divisional EMOCs, and they just go ahead and distribute wherever they feel like they want to distribute.*

> *Because Fijian people are sometimes opportunistic, so they'd receive the pack from the NGO that comes in first and if no-one's alerted that they've received packs from other places, then we'd probably be doing distribution when they've already received. And usually they wouldn't tell* (Fiji, aid organisation representative)

However, rather than there just being some players working outside the system, there is a perception among some of a number of different systems operating simultaneously in Fiji:

> *There's a lot of disaster response programs coming out in Fiji. There is the government and there are other NGOs coming out with their own distribution systems. I don't know if maybe it could be an initiative of government to try to bring in all these coordinating bodies and try and form a national coordinating committee. Instead of us all working separately and most of the time we're duplicating and it's a waste of the resources we have. I know that in the two floods, we tried not to go where the government aids were going because that would just be a waste* (Fiji, aid organisation representative).

A national coordinating committee such as the one referred to here already exists (DISMAC), but some aid organisations do not feel in any way connected to it. It is noteworthy that in this quote, it is up to the government to try to increase co-ordination. The government has no authority to direct aid organisations, and so even when there is close collaboration, the government may only provide information and advice.

Some aid organisations though, do recognise the centrality of the role and position of the government:

> *Responding to the needs of the people in this country is the primary responsibility of the government of Fiji. And I think that's a very bold and simple statement about where everybody else should be* (Fiji, aid organisation representative).

The repercussions of being ultimately responsible for the welfare of the people, including the provision of aid to communities following a disaster, was not lost on the government representatives. They understandably feel frustrated with being the recipients of complaints about issues that are to a certain extent beyond their control when aid organisations are working in isolation.

The implications of the current situation go beyond the problems created for government in the co-ordination of aid, and also impacts on the actual aid provided - how it is distributed and whether or not it meets the needs of the affected communities. The more experienced aid organisation representatives agreed that relationships were crucial in humanitarian aid provision:

> *But you have to be - you don't only build relationships with the people you are assisting to make sure that the assistance is in accordance with that they need. You also have to build relationships with the people who are providing the mechanisms from which you are getting the assistance out to the community…The more partners that are in the field, the more education and the more relationships that will need to be built. At some point there needs to be control over the quality and standard of relief that is given. Otherwise this can be a very lucrative business* (Fiji, aid organisation representative).

One aid organisation spoke of the expectations by governments of aid organisations being sometimes unrealistic, because the government wants to control everything and to be seen to be doing it all. One of the organisations new at disaster relief said that it is difficult to form partnerships with other aid organisations and the government because they do not want to have to wait around for the bureaucracy and assessments from the government.

But from the government perspective, where aid organisations go into whichever community they wish, it will not necessarily be the case that those in the greatest need are attended to first.

The Pacific Humanitarian Team (PHT) has been set up in part to try to resolve some of these co-ordination issues. With the United National Office of the Co-ordination of Humanitarian Affairs (UNOCHA) as the central agency, the PHT has Clusters (e.g. Water, Sanitation and Hygiene; Health and Nutrition; Protection), designed to co-ordinate non-government organisations in the Pacific, and to assist and supplement the existing government disaster management arrangements. However, it seems that there is some resistance to this arrangement, and not all aid organisations, particularly local ones, are linked into the PHT Cluster system, which operates regionally in the Pacific. There was a perception from some aid organisations that the UN bureaucracy is slow and cumbersome, which impacts on the performance of the PHT. It was also suggested to me that donor agencies may be in a stronger position to influence aid organisations, and are a more natural fit for such a co-ordinating role. The reality is that PHT is one of several bodies attempting to form an umbrella over the aid organisations, and within the PHT, some Clusters operate more successfully than others. Co-ordination is then required between these umbrella bodies, creating yet more complexity to the system.

A proposed government initiative is to draw up signed agreements with aid organisations during disaster management. It is difficult to see though, how this would prevent others working outside the system. Once you include individuals as well, responding to media reports and donating directly to individual families or communities, it becomes clear that it is nigh on impossible to have all players working within the formal system. Instead, perhaps the goal should be to make working outside the system either more effective or less attractive.

In Tonga, the issues of co-ordination with aid organisations are not as difficult. Firstly, there are far fewer aid organisations operating in Tonga, making it easier for the government to know who is going where. Secondly, there are not the same trust issues for donors, with donating through government seen as less problematic. However, there are definitely trust issues between the government and the aid organisations:

> *There are not that many organisations here in Tonga that would cause that kind of chaos. We only have just enough where the government can control, so I think Tonga is not like Fiji. We do not have that many NGOs to come in. Because I'm sure the NGO leaders they have some money out of this, so they get paid on the side. That's why they do it, because they get paid. We have to be careful to make sure that we have the NGOs who has the right intention. So that the purpose of why we should accept NGO, we have to measure their intentions, to make sure the fund goes down to the people, not to come to the NGOs. That is something we have to be careful of. Of course the NGO people should have some kind of payment, but not to eat up all the funding* (Tonga, government representative).

Tensions between the aid organisations and government have been evident in the response to Cyclone Ian in Tonga. The Red Cross were one of four aid organisations providing housing aid, until the government stopped the building. The reasons for this are not clear, with a news article providing the official reasoning that the quality of the housing was unsure, and that the houses were designed to be temporary, and the government considered this wasteful since they would be re-building permanent homes there anyway (Fonua, 2014). However, there were suggestions from the community that it was because the government was annoyed that the Red Cross had dealt directly with them, rather than going through the government. In either case, there are clearly issues of co-ordination and governance negatively affecting the response, creating delays and uncertainty for the communities.

7.4 *Turaga ni koro*/Town Officer role

The *turaga ni koro* and Town Officer roles are important in the disaster responses to remote islands in Fiji and Tonga, because of the powerful position they hold as liaison between the villages and government. The *turaga ni koro* in Fiji is the government representative elected from within villages, as distinct from the traditional leader, the village Chief (or *turaga ni vanua*). The traditional Chief is usually the more powerful within the village. However, the *turaga ni koro* has a direct connection to the government. The role is given a lot of power - a point agreed by all groups in this study. A government representative described the *turaga ni koros* as "*the eyes and the ears of government in their respective areas*".

Descriptions from each group of the role included spreading the warning throughout the village, communicating with DISMAC about damage after a cyclone, distributing aid, getting the community together to organise cleaning up and other jobs in the village, making sure that everyone is helping, and preventing any trouble or conflict between villagers. The power of the role has been increased since 2010 with the initial damage assessments following a disaster now being the responsibility of the *turaga ni koro*. Community members on the island very clearly articulated the idea that the *turaga ni koro* is the exclusive liaison between the village and the government:

> *You know the Commissioner, they ask us, 'who's talking? Oh, OK, the turaga ni koro from Delaidvadra. OK then, talk'. Otherwise no* (Fiji, male villager, aged 46-59 years).

With this exclusive access to the government, the *turaga ni koro* role was described by one villager as "*the door to the government and the aids there*" (Fiji, female villager, aged 35-45 years).

While all groups agreed on the power of this role, there was less agreement on whether or not this works. Having only the one person with whom the power and control rests has multiple impacts in terms of whether or not they fulfil their duties, and how equitable they are in doing so. There was a recognition within the community that if the person in the role is not proactive,

then "*the village will suffer*". For example, there was no consensus in the community on the process of getting DISMAC's assistance after a disaster. While all community members agreed that the *turaga ni koro* was crucial, some thought the *turaga ni koro* should make a report to DISMAC, while others thought that DISMAC would come to them. This may have been a function of the increased involvement since 2010 of the *turaga ni koro* in the initial damage assessment, however, the current *turaga ni koro* was one of those who thought that DISMAC would just turn up. Combined with the perspective of one villager that if the government do not hear from a village they just assume that everything is okay, there is some cause for concern.

The equity and fairness of *turaga ni koros* was called into question by both aid organisations and community members, and to a certain extent recognised also by government. Aid organisations recognised that the distribution of aid is not always fair, with some people being favoured and others getting none. Villagers described a lack of consistency in how food aid was distributed with per household after one event, and per person after another. There is a definite perception that while DISMAC may decide how many houses need to be rebuilt, it is the *turaga ni koro* who decides who they should go to. The checking done later by government officials is based purely on the number of houses, not whether or not everyone is adequately housed. Through this system, some people have ended up with two houses, and others have been left off the list and had to argue their case with the government over a period of years. On a remote island, there are few outsiders around to see this occurring.

While there was some recognition by government representatives that *turaga ni koros* may not always be fair, there was definitely no responsibility taken for that situation and its results for individual villagers:

> *So what we do, we deliver the 100kg bag. We give the turaga ni koro- this is the 100kg bag rations. So the turaga ni koro has to work it out - how much has to be distributed to this family, to that family. The turaga ni koro's responsibility comes in there. If he distributed it unfairly, that's his call* (Fiji, government representative).

One consequence of the fact that the position is elected from within a community and retains exclusive access to the government, is that there is no one for the community to complain to when there is perceived inequity or corruption by the *turaga ni koro*. I was told that complaints to the government would be met with - "speak to your *turaga ni koro* about it". Within the community some people said the answer would be to elect a new person to the position. However, it seems that the reality of the situation may not always allow for this simple solution. Villages are often small. There were only about 150-200 people between the two villages on this island. With many traditional communities not recognising women as being eligible for the role, the pool of available adult males who are considered to be respected and capable may be quite limited. In practice there may be more a sense of sharing the role around and giving different people a turn, than necessarily having a selection from which to choose the best person for the job each time.

The power relationships are clearly complex in the villages, with the *turaga ni koro* and the traditional hierarchy (see Dumaru (2010) for a more detailed explanation of Fijian village hierarchies). A number of people in the community suggested that there should be a committee rather than the one person responsible for so much. Such a committee may include the *turaga ni koro*, the village Chief, the heads of each *mataqali* (similar to a clan) represented in the village, and the Pastors. One of the elders within the community said that such a committee used to exist, and the Pacific Community-focused Integrated Disaster Risk Reduction (PCIDRR) Project has been working since 2008 to establish disaster committees in every village in Fiji. However, unless the official bureaucratic policy of only recognising the *turaga ni koro* also changes, ultimately, control will be retained by the individual in that position.

The whole issue of the power of the *turaga ni koro* position was not significant for either aid organisations or the government, but was fundamental in most community interviews. This seems to be representative of the disconnect between the village level and the higher levels of the disaster response system.

The community in Tonga provides an interesting point of comparison, since in both villages there was in place the very type of committee the Fijian community were asking for. These village disaster committees are being established also as part of the PCIDRR project. With so many fewer villages in Tonga than in Fiji, the process is covering the population more quickly.

The position of Town Officer (TO) in Tonga is equivalent to the Fijian *turaga ni koro*, in being the community elected government representative. The role of the TO is similar to the *turaga ni koro* during a disaster in that they make a report to the government of damages in their community and then distribute aid to the community. Also similar to Fiji, not everyone in the community thinks this system is good or that the TO is always fair. Some suggested that aid should be distributed directly to households, bypassing the TO. However, overall the role was mentioned by community members as a source of concern and conflict much less often in Tonga than in Fiji. This may have been because the individuals in those positions at the time of my research were more respected in Tonga than in Fiji, since many of the Fijians noted that "it all depends who the *turaga ni koro* is". The fact that there is a village disaster committee in place to assist the TO in their duties may also be relevant.

The fact of having a village disaster committee in place does not guarantee anything, as was exemplified in the two Tongan villages. Both had a disaster committee in place, but with very different experiences. In Falemea village, the committee was established and then no further activity took place. The committee is not active, and was scarcely mentioned by the community members unless I specifically asked about it. The Falemea committee did not seem to really know what their role or purpose was, and lacked initiative to turn the opportunity into action:

> *Only tell us we are a committee, but they don't use us…that's the last time we can meet with them from last year to this year, because the government not work together with us…only we have to waiting for them. If they can call us, so we can work and they tell us what we're going to do* (Tonga, male villager aged 35-45).

A fundamental problem with introducing the village disaster committees to a community was summed up by one villager, "*there is nothing to encourage them or empower them to do this. They will not do it"*(Tonga, male villager aged 46-59 years). This problem was recognised by the aid organisations that acknowledged projects are unlikely to be successful unless there is continued contact with the community, who "*only take notice when you are there*" (Tonga, aid organisation representative). But where a project is operating in every village in the country, keeping in touch with each community to maintain training and motivation is immensely difficult.

Even in the other village, 'Uiha, where the committee was more widely recognised and active, there was disagreement about how successful it is. There is a view from some community members that the committee is much better than having only the TO, and that they were very helpful in the cyclone in 2012, giving people advice about how to prepare. However, others see a lack of appropriate training for the committee members, and view the committee as a missed opportunity because highly functioning committees are likely to build trust and attract donor funding for projects.

The village disaster committees in Tonga have the potential to establish and maintain important networks for disaster management, but this potential may not be realised at the moment. There is an opportunity here for the building of social capital, linking the villages and the local government. Given the importance of social capital in disaster response (see Chapter 9 - issues of remoteness), the good work begun in establishing the committees needs to continue.

7.5 Conclusion

Governance and co-ordination issues are central to the effectiveness and fairness of the disaster response systems in both Fiji and Tonga. In Fiji, major obstacles are presented by the sheer number of parties involved in disaster response, with the established aid organisations being joined by corporations seeing the public relations value of distributing aid, new and local aid organisations that appear after big disasters, communities and individuals, both nationally and internationally. The government remains ultimately responsible

for the provision of disaster relief and ensuring the welfare of their citizens, but they have no power or control over the other parties involved. This adds complexity to the organisation and prioritisation of aid.

In Tonga, there are fewer players involved and consequently, governance and co-ordination issues are less problematic than in Fiji. Governance issues in Tonga are more concerned with the lack of clarity of governance processes and not having a formalised structure at the district level. This leads to confusion about who the decision makers are, who has what authority and power, and the flow of information between the levels. Traditional power structures are often relied upon rather than the formal, documented governance structure.

The concerns around governance and co-ordination may, however, be viewed positively from the perspective of resilience and adaptive governance. The heterogeneity of responders and responses, overlapping responsibilities and resulting redundancies in the system are supportive of flexibility – a key ingredient of resilient systems (Lauer et al. 2013) and adaptive governance (Wyborn and Dovers, 2014).

In both countries, what is written and what happens in practice are usually different. There is a reliance upon tradition and past experience rather than adhering to standardised and formalised processes. For those who are part of that system the processes are probably clear. For outsiders and newcomers however, this is not the case.

The government liaison position (*turaga ni koro* in Fiji, and Town Officer in Tonga) was a source of angst in both communities because of the power that resides with that individual - the power to be equitable or not equitable, proactive or only reactive. In Tonga, this was somewhat lessened by the establishment of the village disaster committees, however, the differing experiences in the two villages of the operation of this committee, confirms the view of aid organisations - that their mere existence is not sufficient.

Chapter 8 - Expectations and dependency

Perceptions have been found to influence decision making about disaster response and adaptation actions (Schwarz, Béné, Bennett et al., 2011). Equally, social and individual factors, such as the perception of risk, habits, social status and age will limit adaptation actions (Adger, Dessai, Goulden et al., 2009).

This chapter examines the expectations of the three groups, community, aid organisations and government, of disaster aid, and of each other in relation to disaster preparation and response. These expectations link into response and dependency on aid, especially in the Pacific where there is a commonly held belief, borne out in the interviews in this study, that communities are aid dependent. The chapter pursues this theme, looking at issues of dependency and asking - who is dependent on what?

8.1 Expectations of aid

A consistent message from the aid organisations and the government representatives in both Fiji and Tonga was that "*expectations from the communities are high*" (Fiji, government representative). However, this expectation was not always presented as a negative: "*I think as a human being I think they expect that. I think every human being needs assistance after a disaster*" (Tonga, aid organisation representative).

Post-disaster aid has not always been available in either Fiji or Tonga, and community members recognised this:

> *Aid is a new thing for the people of Tonga. They are like, 1961, no aid. The people will do what to do, only the family from overseas country and from Tonga, they will bring food for them and something like this* (Tonga, female villager aged 60+).

Aid organisations in Fiji talked about high expectations of aid as being relatively new in the history of the country, and across sections of the community:

> *If you go anywhere in Fiji today, compared to 40 years ago, they will always expect assistance, irrespective of the scale of how big the disaster was, they will always expect assistance* (Fiji, aid organisation representative)
>
> *…in Fiji, whether you've got money or not, once anything happens, like a disaster, that millionaire who has money will just be waiting for whatever will be coming* (Fiji, aid organisation representative).

There were a few different contributors to this mentioned. Firstly, the most experienced aid organisations talked about the importance of having a relationship and familiarity with the communities they are assisting. This is because as an outsider, it is imperative to arrive with something, and hence, outsiders providing aid increase expectations for the future:

> *Get here first. Whoever is first on the ground gets a handshake. Everyone else after that, you are either denied information of what's happening, or you're given a shopping list, everything else that the first ones didn't bring. So if you're not very familiar with this community you are going to be creating a lot more expectations in the next disasters* (Fiji, aid organisation representative).

With the increase in the number of organisations involved in providing disaster aid in Fiji, and the resulting race to be the first to arrive, and be seen to be doing something, the connection with the communities may be becoming more tenuous, exacerbating the effects. There may also be a difference between the aid provided and the actual needs of the community. Where well meaning organisations seek to assist by saying, "*this is what we do, so we'll do it in this community and hopefully it will help a bit"*, the needs of the communities will not necessarily be fulfilled, but the expectations of what aid may be available will be increased for next time. An aid organisation representative said that often the funding agencies assume they know what communities want;

> *Usually there's a lot of wastage of resources that come down because of that. So maybe if we get a clear definition of what they actually want from ground level, then work them up to where we give down the funding, there's a lot of advantages that would come with that* (Fiji, aid organisation representative).

There is also a realisation that disasters are an opportunity for governments to be viewed favourably by communities. Both government and aid organisation representatives mentioned politicians and political parties delivering aid to specific areas after past disasters. Articles in the Fiji Sun newspaper after Cyclone Ami confirm this.

There were many examples provided of the ways in which the increased expectations of aid manifest and their repercussions. Aid organisations talked about people making no attempt to clean up or repair their homes until after the assessors had been through in order to '*guarantee a new home*'. In Tonga, community members also acknowledge this, saying: "*People learn to wait before helping themselves with housing damage or else they risk the survey saying that they had no damage*" (Tonga, male villager aged 46-59).

This seems to suggest a sense of entitlement to aid. If you can fix the house yourself, then do you actually need aid? Or is it just that because it is seen to be available, people think they should get it? One villager thought that the community should take photos of the damage prior to making their own repairs, so that the surveyors have evidence of what damage there was and the community can still be compensated for having made the repairs themselves.

The legislation in Fiji stipulates that once people have been in a formal evacuation centre for 12 hours, the government has to provide them with food rations to cover 48 hours. Accordingly, people in Fiji are turning up to evacuation centres without any food and water because they expect to be provided with it soon after arrival. In contrast, in Tonga, where there is less expectation of food being provided in evacuation centres, people usually arrive prepared. A government representative in Tonga spoke of the potential consequences of supplying provisions in evacuation centres:

> *At what time they forgot to go back home. They don't want to go home because a lot of cases if they have food supplies at the camp or they got clothing or the mentality change. 'We are better off here than if we go home because here food is being given away*' (Tonga, government representative).

There was recognition that aid organisations turning up 'too early' will reinforce these perceptions: "*They spend more time crying than actually trying to rebuild their lives*" (Fiji, aid organisation representative). Some aid organisations talked about the aid as having become a way of getting ahead in life - that over time, with the frequency of disasters in Fiji, some people have not only become dependent on it for their post-disaster survival, but now see disasters as a way of boosting their standard of living:

> *Take for example, I'll ask for more cyclones, more cyclones, because I know I'll get more assistance every time. It's been a long time and there've been no cyclones in Fiji and I really need one here in Labasa because I really need help, a new house and new water tank. The things that I can't afford before, I will put it as a complaint. I need a water tank because I'm taking dirty water from the river. So I'll ask for more cyclones. To better my standard of living* (Fiji, aid organisation representative).

For some of the more experienced and professional aid organisations, the increased expectations of aid have direct repercussions on their work. Some aid organisations in Fiji mentioned that during the 2012 Nadi floods, the Red Cross encountered opposition and criticism from communities that did not understand their methods of doing assessments and then providing aid to meet specific needs of each community. Where other organisations had arrived quickly and handed out aid to everyone, the more structured and needs-directed approach of the Red Cross came under attack.

Expectations are to a certain extent naturally based on past experience. So it may be logical that expectations of aid over the past 40 years have increased as the provision of aid has increased. However, debates about the timing, amount and type of aid, dependency and self-sufficiency of the community, date back at least that far (McLean et al., 1977).

It was not clear that the expectations of aid expressed by the community on the islands in Fiji or Tonga matched the descriptions of the aid organisations and the government, above. It was true that there were clear and high expectations that help should be provided after a cyclone, but it was linked directly to needs, and sometimes framed around being seen and noticed by government, as much as the provision of aid - "*To help us. To come and see us, see what's happening after the hurricane*" (Fiji, female villager, aged 35-45 years). Specific items of aid mentioned closely aligned with examples of aid provided in the past: food, housing, clothes, a tarpaulin. In Tonga, there was more awareness of the direct link between the availability of donor funding and the availability of aid, which tempered expectations:

> *Here in Tonga, it depend if any aid. There will not be happen hurricane, aid, hurricane, aid. It depend from you know, the government, they don't have enough money for the aid. So they have to meet, looking for a donor, have some aid from them. Maybe the Red Cross will be the first one. But who knows? If the Red Cross, they don't have enough?* (Tonga, male villager, aged 46-59).

In Fiji, there was a firmer expectation that there would be at least some aid, but the question was how much. Many people said that the government should provide rations for three months, because that is how long it takes to harvest new crops of kumala, the fastest growing root crop. Most agreed that recently provided aid (after Cyclone Tomas in 2010) was not enough, because it did not cover this time period. However, despite this perception, there was also general agreement that the community did have enough food to eat.

Consistency is important to the community, and not knowing what to expect or when it may arrive was difficult for them. "*They have to give, always give the aid they give before*" (Fiji, male villager, aged 35-45 years). It makes sense that on an isolated island, it would be important to know how much of the recovery had to be done alone - for example, knowing how long leftover food needs to last, and the extent to which informal rationing of it is required. For people in more accessible locations, inconsistencies may have less impact.

Expectations around housing aid also differed between the two countries. In Fiji, there was a clear expectation that the government would replace houses, whereas in Tonga, some thought it was the government's responsibility but others thought it was the responsibility of the individual family. This contrast reflects the recent experiences in these communities, where in Fiji the majority of houses in the whole island are 'hurricane relief' houses. Although many houses in the villages in Tonga were aid houses following Cyclone Isaac in 1982, they were funded through a patchwork of means (government, church, family), and the lack of assistance to 'Uiha village following the 2011 and 2012 events has cemented the inconsistencies and uncertainty, further dampening expectations.

One of the aid organisations talked about the recency of the increase in expectations of post-disaster aid, saying that it is the younger generation who have these high expectations, but not so much the older generations. This was borne out to a certain extent in the community interviews, with younger villagers being usually more specific about what types of aid they expect, and older villagers expressing gratitude for 'whatever aid they can give'. It was elderly villagers who articulated some discomfort with being given donations, saying that they could not ask for anything or express an opinion on aid provided, since they are not doing or giving anything in return. This kind of appreciation and humility about aid did not seem as apparent from younger participants, for whom aid, and asking for aid, appeared more acceptable.

Greater contrasts between Fiji and Tonga are found in the governments' expectations of aid and donors. In Fiji, where there is some budget allocation for disaster response, and high involvement of aid organisations, the expectations of government seem to centre around the governance and co-

ordination of the aid than in the amount of provision of that aid. There seems to be an assumption that aid will appear, and the challenge will be in dealing with it all. However, in Tonga, there seems to be a more clear expectation that if aid is to be provided, it will only be if there are donors. With a higher priority placed on food than housing aid, food is considered a must, and housing an - if there's donor funding available. The response to Cyclone Ian has been somewhat contradictory to this, with a clear emphasis on not only replacing all the damaged and destroyed housing, but doing so quickly, with the program proceeding before clarity on where the funding for it will come from. The extent to which the timing of a national election in Tonga, within 12 months of this cyclone has affected this response is probably not insignificant.

There have been suggestions that aid is being understood as a right rather than a gift, an attitude being driven by the government with such examples as public predictions that Tonga's GDP may increase as a result of the cyclone (Brown Pulu, 2014). Whether such a prediction may end up being true or not is perhaps less relevant than the obvious expectations of aid it demonstrates.

8.2 Dependence

Reliance on aid was recognised by all groups, but expressed in different ways, with some viewing it as a human right, others more as accepting help than being dependent, while some thought of it as akin to laziness. The perception of what post-disaster aid is and is for, varied both between the groups interviewed, and among the community members on the islands in both Fiji and Tonga. Aid in this context should be about fulfilling needs. In that sense, it could be argued there cannot be dependency on something based around need. However, that presupposes those needs cannot be fulfilled by any other means - that aid is essential to fulfil needs that would otherwise remain as needs. Once there is acknowledgement that other legitimate, accessible and achievable means of fulfilling those needs exists, there is a shift from need towards want, along a continuum. The extreme end of such a continuum may be exemplified by accepting food aid that you then have trouble fitting into your already full food cupboards, or accepting a re-built house when the one damaged or destroyed was not your primary residence anyway.

It seems that there is a definite perception among aid organisations and government, and from some within the communities, that people are moving further and further towards the 'want' end of that continuum, and this is expressed by many as being 'dependent on aid'. This calls into question definition and use of the term 'dependent'. Firstly, with the differences between the fulfilment of wants and of needs. Secondly, between being truly dependent upon something versus seizing the opportunity provided by disaster aid, as one of the few opportunities which exist, especially in remote communities.

Aid organisations spoke about dependency as a mindset of people that can and should be changed:

> *I'll always go out with the awareness, focus in the communities, try to kill that idea of hand-out mentality. Not to wait for the help to come. Just to help yourself and see what you can do. Help that will come is an added bonu*s (Fiji, aid organisation representative).

> *In the communities we're training we tell them they must be self-sufficient for at least the first three to five days. So before the cyclone comes, they must stock up on root crops, food and all that, and not to expect that immediately after, the government will be at their doors* (Tonga, aid organisation representative).

In Tonga, government and aid organisation representatives spoke of the culture of dependency in Tonga. Dependency on post-disaster aid may be seen as simply an extension of that:

> *So far, you know, the government of Tonga is being able to operate simply because of donors from overseas. I think we are still far away from, you know…The Tongan people as a whole still expect help to come from overseas. Because we have no resources, no natural resources, so we still rely on government, budget support from overseas. So that attitude of expecting help from*

> *others, is still pretty much linked within our traditions as a whole* (Tonga, government representative).

One of the aid organisation representatives took this concept further, talking about how the dependence on not only aid, but remittances from family overseas, becomes a cycle. Parents work hard to get an education for their children, with the expectation that once the children have a paying job, they will send money home in return.

> *But I think we need to teach the people to be self-reliant. Too much waiting for handout. Not only from the church, but from government, from overseas, and from their children who work. The more you ask, or are depend, the more you perpetuate the poverty level that we have. I think if everybody work and look and think outside the box. Don't stay with the traditions we have* (Tonga, aid organisation representative)

Remittances though serve functions beyond the financial transaction, maintaining culture and links to homelands. During disaster times, these networks form an important part of the overall disaster response.

Government representatives also spoke of dependency on aid as being about inaction on the part of community members, with aid receipt having taken the place of self-help in recovery from a disaster: "*People have their coping ability, we've been through a lot of disasters. It's just the heavy reliance on government*" (Fiji, government representative).

There were numerous examples provided of how this inaction manifests itself - fallen and damaged crops leftover from a disaster not being harvested and used. Simple, practical actions that are not done:

> *The sad thing now in Fijian villages, when government provides everything, after for example the water has receded, or the cyclone has passed, it continues to rain but light rain for a few hours. No-one is even taking whatever containers for the water so they can, but they*

> *ask for bottle water from government, which is crazy* (Fiji, government representative).

These perceptions call into question the necessity of certain aid, reflecting back to the needs-wants continuum.

Within the community, there were a variety of opinions expressed about the need for and dependency on aid, along with context and detail not seen from the groups more remote from the community level. For example, the receipt of food aid despite leftover crops being accessible was given a new level of complexity by one community member, with rations representing time:

> *Well I can say, but we need for the rations too. We need for that. Because at that time, if the rations can't be there to help us through, to develop what we can do, like when houses are. Give us time to do that. Otherwise the time we could use on that, we use on finding what we can eat* (Fiji, male villager, aged 46-59 years).

Others spoke of rations providing the foodstuffs that you cannot purchase when there is no money after a cyclone:

> *So everyone still needs food aid, because there's no money to buy the extra things, the flour and sugar and stuff. But if you have the right crops planted, you still have some variety in what you are eating. Whereas if you haven't, then you will be eating only the food aid* (Tonga, male villager aged 60+).

For many aid organisations and government representatives, the issue of aid was articulated as being much more direct and clear cut - food aid is necessary where there is insufficient food available. These community members though, were placing the food aid in the broader context of post-disaster recovery. The view that acceptance of aid is more about making life easier at a difficult time, than about actual dependency, was echoed by another villager talking about the government providing materials and help to rebuild houses - "*The community can do it, but lucky the government comes, and we are very thankful for that*" (Fiji, male villager, aged 46-59 years).

Particularly among elders within the villages though, the perception of a dependency on aid was very clear. One elder was especially critical:

> *Yes, there's a change (from the past). People just wait for the government, unlike before when they have to do it…If the government is doing this every time, there will be people just, they won't do anything, they won't look after their own places. They will just know - oh, the hurricane will come and we'll wait for the government to help…They don't value it, because they don't spend anything on it. It's just the government, the hurricane comes and takes it away, the government replaces it. So nothing from their own pocket, or nothing from their own strength to do it* (Fiji, male villager, aged 60+).

As part of the World Bank housing aid project from Cyclone Ian in Tonga, villages were asked to identify a small number of highly vulnerable families within the community, to receive houses from one particular category of the project. The villager who was tasked with this job said that he was criticised for nominating families who others consider to be only the most in need because they are lazy. There seemed not to be so much a question of whether or not they need a new house, but why they do - because they are vulnerable and unable to help themselves, or because they are choosing to be dependent on aid? Debates and conflicts on this issue abound within the community, as well as at a broader level.

Some of the younger generation also recognised the dependency within their own community - "*They will just sit and wait for the government to come and do their job*" (Fiji, female villager, aged 35-45 years). However, this younger perspective seemed to be more that this is just the way things are done. If you have no memory or experience of disasters before there was aid, it makes sense that you would not necessarily perceive yourself and your community as being dependent on aid in the sense that there is another option, but that this is simply how it works.

When asked about the likely availability of aid in the future, many, including younger villagers, quickly responded it seems unlikely that aid would continue to be as available in future if disasters get worse, and that they would just have to do everything themselves instead. This was usually expressed more with resignation than the outrage or despair one might expect from people who feel dependent on aid to meet their needs. It might be the case that the dependency perceived by the aid organisations and government is less apparent among my remote island samples. It might also be that the shift away from aid dependency may be more achievable than at first glance.

The people in Fiji expected a certain level of aid because that was their experience in the past. Those in Tonga expected aid would come subject to donor funding availability. Few expressed the view that they cannot do it on their own, and that without aid they would be in dire trouble. That level of despair and hopelessness was expressed much more in relation to the longed-for seawall, than post-disaster aid. So while aid-expectations-dependency-aid may well be a cycle that feeds onto itself, on these island communities at least, it seemed far from unbreakable.

8.3 Conclusion

The concepts of expectations and dependence are complex, and feed into each other. The view among the governments and most aid organisations in both countries is clear - the people have unreasonably high expectations of aid, and are too dependent upon it. However, the view from the communities was more that expectations of aid were consistent with previous experience of receiving (though not always) it, and that it arrives so late that they have to know how to fend for themselves anyway. Late or not, the food aid is needed and welcome, but the communities on the remote islands are not about to start relying on it turning up soon after a disaster, and therefore not helping themselves.

The community perspective also showed that aid makes life easier during the difficult post-disaster period, freeing up your time for making housing repairs, helping with rebuilding houses, and providing the extra food to allow for some variety in your diet while incomes are disrupted.

These views add layers of complexity to the definitions of need and dependency, and exemplify the chasm between the views and experiences of the government and aid organisations on the one hand, and the remote islanders on the other.

The stated expectations of aid of the community were primarily related to Maslow's physiological and safety needs levels (Maslow, 1943). There are two instances where the increase in the availability of aid may be said to elevate these expectations to higher levels: firstly when need is expressed at the community level for aid as acknowledgement of what the entire community has been through. Secondly, and most likely in less remote places, where competition among aid organisations leads to inappropriate and poorly directed aid.

Chapter 9 - Issues of remoteness

When there is a disaster, in today's world of global connections and communications, we tend to think that people will know what has happened, and will come and help, sooner, rather than later. Especially in modern cities, when there are delays, there are outcries, as seen after Hurricane Katrina. However, for those in remote places the experience is entirely different, with delays a way of life. What do you do when a disaster has struck and you know that no-one is likely to come and help the next day? Or the day after…or the one after that…? Remoteness impacts all stages of the disaster management cycle.

A remote island is difficult to define. It is not simply a geographical construct, with some places being outer islands, and other places perhaps even on main islands, but considered remote in terms of their development options, service provision and modernity (Connell, 2010).

This study specifically focussed on two remote island locations in Fiji and Tonga, to investigate the experiences of the people, and to explore their views on how disaster response may need to change in future. The islands chosen here are considered remote because of both geography and service provision, with both islands being a boat ride away from a main island, which itself is a regional rather than country capital. This chapter details the issues of remoteness faced by these communities.

During my fieldwork, I experienced what could be described as two different Fijis. The first was that of a small isolated island, and the second was the main islands. On the isolated island, aid organisation visits are few, and the waiting time for post-disaster aid is better measured in weeks than days. The contrast with the described experience of the main islands was vast. The main island experience - an over-abundance of aid organisations, many of whom arrive and deliver aid before the government have arrived, provisions to evacuation centres within 24-48 hours, and aid arriving from multiple sources - could not be further from that of the village communities.

9.1 How long for help to arrive

All groups in this study noted communication as a difficult issue for remote islanders. On the island in Fiji, a lack of communication directly equates to a lack of warning about cyclones, and a lack of assistance afterwards. People spoke of having to travel into the nearest District Office (three hours away) when telephone and radio lines were down following a cyclone. Aid organisations and government representatives agreed that the Red Cross are the only ones in Fiji with satellite phones. During 2012, they were being trialled in the Northern Division by government, but their implementation was considered to be very slow. Similarly in Tonga, satellite telephones are not readily available to government, although the armed forces do have them and are a key partner in aid distribution.

Almost all community members in Fiji thought that the aid, and rations specifically, takes about two to three weeks to arrive after a cyclone, and that this is too long to wait. They spoke of the uncertainty around whether there would be rations and if so, when they would arrive, and of it taking so long that alternatives had to be found. An example was provided of family in Suva organising and delivering aid before the government or aid organisations had arrived. Others spoke of travelling to Labasa to either sell fish at the markets so they can purchase their own 'rations', or being asked to travel to Labasa to collect the rations rather than waiting for the extra time it would take for them to get to their island. There was some recognition by those who had had direct involvement with government that the logistics of post-disaster aid delivery are not simple, with roads to be repaired and sometimes communication issues.

The experience of having very quickly received a lot of aid and attention, including from the Prime Minister who visited the island in the days immediately after Cyclone Ami in 2003, seems to have coloured perceptions of aid and timeliness. So while logistical issues are sometimes recognised and acknowledged, these islanders are also aware than things can and sometimes do happen much more quickly. It was not clear whether or not the connection between need and prioritisation of aid was well understood. Few talked about the cyclones in terms of their impacts outside their island.

There was less consensus around how long leftover food will last before people are desperately in need of rations. Estimates ranged from four days to two months, with some people saying it depends on how well protected your crops were from damage in the cyclone. It also depends on the type of crop. For example, yams kept dry can last for considerably longer than taro. A few community members spoke of feeling lucky that they are on an island with abundant and accessible fishing, providing a reliable source of food.

In Tonga, the wait for aid is likely to be longer. Estimates ranged from two weeks to more than a month, with most groups agreeing it takes about four weeks for food aid to arrive. Most community members thought that if aid took one or two weeks, leftover food would last that long. Some government representatives considered that food should last for more like three to four weeks, so that as long as food aid is delivered within a month it would be acceptable. Housing assistance in Tonga was said to take upwards of 12 months, with some estimates reaching five years.

One of the aid organisation representatives in Tonga spoke of the tendency for the government to wait until they have worked out exactly what is required before putting in any request for international assistance. This leads to delays in donors and aid organisations being able to provide assistance to communities, even when they are prepared and have stock available. In Cyclone Ian, which hit Tonga between 10-12 January 2014 media reports immediately quoted the Tongan government officials and aid organisations as saying that this was the largest cyclone to affect Tonga in decades. However, there was no request for international assistance until 22 January. For a country that is almost entirely dependent on foreign donors for disaster aid, a request seemed to be inevitable and yet took 10 days to occur. While the government puts the delay down to working out what was going to be required, donors have expressed the view that there are some things that will always been needed and could be provided immediately and that without a formal request, they are left trying to find ways around the system if they want to help quickly. Political motivations and issues have also been suggested to have played a role in the delay (Brown Pulu, 2014). Issues such as these extend the wait for those on remote islands hoping to receive aid.

9.2 Isolated islands

Two of the main issues in disaster response, which are relevant throughout Fiji and Tonga, but especially for remote islands, are transport and communication. One aid organisation representative estimated that 30-40% of villages and communities in Vanua Levu (the second main island in Fiji) are accessible only by boat. However, few aid organisations use this form of transport and fewer still ever make it to the isolated islands. I was told that there are no aid organisations specialising in going to the outer islands, and most focus only on the two main islands, relying on government to assist everywhere else. Neither aid organisations nor the government departments responsible for disaster risk management own boats for use in disaster response or risk reduction work, so they rely on navy, local businesses and individuals to provide transport for them. This means that there are many villages and communities that are either inaccessible, or for which transportation is very difficult all the time, let alone after a disaster. Some disaster risk reduction work is done on outer islands, but this is dependent on donor funding, and the willingness of those donors to pay the higher costs involved in working in isolated areas.

From the villagers' perspective, being on an outer island has both advantages and disadvantages. Having a reliance on the sea and fishing to fall back on after a disaster was recognised as an advantage of their island, compared with isolated communities on the main islands. However, the length of time it takes for help to reach their island is a source of angst, with some believing that it was not worth the wait. One person said that they should receive money as aid after a disaster, because it represents fuel to reach the mainland.

The government in Fiji recognised the apparent double standard in the provisions supplied to evacuation centres on the main islands compared with outer islands. However, it was justified as being about the distance evacuation centres are from home. On outer islands, evacuation centres are by definition, within the communities. A government representative argued that on the main islands, being in an evacuation centre often requires being completely removed

from your community or village. However, most evacuation centres throughout Fiji are schools, community halls or churches, which are located within communities. Therefore, it will not be everyone at an evacuation centre who is a long distance from their home. Equally, the school on the island I studied in Fiji was located in one of the villages, but served both, as well as villages in neighbouring islands. Clearly, not all villages in the outer islands have evacuation centres co-located.

In Tonga, the contrast between outer and main islands was certainly less, probably because there are fewer aid organisations involved in the whole country, and because there is at least one, Mainstreaming of Rural Development Innovation (MORDI) specialising in remote communities. Their goal is "to improve the sustainable livelihoods of the poor people in rural areas and isolated islands in Tonga". Another, the Tongan National Youth Congress acts as an outreach services for other aid organisations into the remote communities through their youth representatives in every village. However, there is still a common perception that isolated islands do get left out by aid organisations, donors and governments.

One aid organisation representative, talking about climate change adaptation project funding said:

> *So the government are only doing this for the capital of Ha'apai, and the capital of Tongatapu. Maybe the donor ignore all the islands, and also the government ignore the islands. So they protect the capital only. All the donor come to Pangai, all the donor come to Nukua'lofa. Or maybe the donor come and the government said Pangai or said Nukua'lofa. They ignore the isolated island like this* (Tonga, aid organisation representative).

The community members too noted that being on an outer island changes the experience of disasters:

> *It's different. We live in the island, and it's away from the main island. That's the one problem. If we have some cyclone and some problems, it's different to…the main island, to Pangai. So what thing we looking for, we pray, kai (food) or not* (Tonga, male villager aged 35-44 years).

Recognition of the resilience of those on remote islands came from government, aid organisations and the community itself in Tonga. Aid organisations spoke of main islanders viewing those on the outer islands as having more traditional knowledge about warning signs and *fale* building, as well as the resilience brought about by getting food from the sea. There were also comparisons made with the experience of western countries in disasters (as depicted in media reports), from the perspective that Tongan need to hang on to their resilience:

> *I mean that we've all been proud of in the past. When people have cyclone comes, we hit, then we got and built up and move on. We don't want to see like when Cyclone Katrina hit the United States. The people were completely lost. You remove the supermarket from them, and completely lost. They have no resilience whatsoever. People crying, I don't know what to do with my babies now, I've got no milk, there's no water. When I look at that kind of things, I think, well, I'm glad I'm Tongan* (Tonga, government representative).

How should aid work in this instance, and what is sustainable into a climate changed future of increased disasters? Should provisions be supplied to evacuation centres that can easily be reached under a 'we'll do what we can' scenario? People in other centres that are less accessible will have to fend for themselves and that is just the way it is? Those who are not helped in this way must be more prepared and self-reliant. Every dollar spent on this aid is a dollar not available for some other kinds of aid. So if those in isolated areas can look after themselves in the immediate aftermath, should those in regional and urban areas be expected to also? Or should greater efforts by made to reach

isolated communities and outer islands sooner? Who is really more in need? Those in remote areas are more likely to have farms and crops but in regional and urban areas, people are more likely to have access to money and shops. The picture changes when we are talking about medical help for people who have been injured or killed in a disaster, especially on a remote island when communication and transport are disrupted. Is the response able to make this shift in urgency? The issue is complex, with no simple solutions. However into the future, with an increasing demand on post-disaster recovery efforts, money should be spent where it will have the most impact.

There is almost unanimous agreement that this is in disaster risk reduction and community education, not disaster response. Perhaps the policy focus should shift from doing the most possible for the highest possible number of people as quickly as possible, to embracing and expanding the self reliance and preparation people on outer islands have no choice but to exhibit. Rather than being the forgotten minority, the outer island communities may be a useful starting point. At the moment, people on the outer islands wait two to three weeks for aid to arrive and, according to aid organisation and government interviewees, those in the main islands are in outcry if two to three days have passed before aid arrives. Meeting somewhere in the middle may be more sustainable into the future, rather than continuing and expanding the current main islands approach.

9.3 Community cohesion as social capital

The multi-faceted concept of vulnerability includes features such as socio-economic status, demographics, lend tenure, and social capital (Reale and Handmer, 2011). “Social capital is a resource that facilitates collective action for mutual benefit” (Chamlee-Wright and Storr, 2011, p268). In situations of disaster where the wait for outside help is better counted in weeks than days, collective action may be vital. Resilient, well-prepared communities may be able to be the help rather than waiting for help from outside (Jennison, 2008).

Social capital - a sense of belonging, a sense of community, support for collective action, and an attachment to a place, have been shown to be important in disaster recovery and resilience (Cox and Perry, 2011, Schwarz et al., 2011).

Networks may be seen to help facilitate community-level planning and preparation for oncoming extreme weather events, and to assist in co-ordinating and managing the response at the community level afterwards (Chamlee-Wright and Storr, 2011). Disaster management specialists have called for an increasing focus on the social aspects of disasters, and networks among people and between people and policy makers (Pathirage, Seneviratne, Amaratunga et al., 2012). Continuity of social networks influences the community's ability to access resources after a disaster (Tan-Mullins, Rigg, Law et al., 2007). In the context of a flood-affected town in rural Australia, social connectedness and a sense of place and connection to the place, along with the collective belief that people help each other in times of trouble, and a belief in your own capacity to cope, were found to be important for resilience (Boon, 2014). These are all elements found in both remote island locations in this study. Nevertheless, the community connectedness was not the same on both islands.

On Druadrua island in Fiji, during one recent cyclone, the people in Salevukoso village realised from the wind direction that Delaivadra village would be getting the full force of the wind and waves. So during the eye of the storm, a boat was sent over to rescue their neighbours. In contrast, on 'Uiha island in Tonga, the people in Falemea village in 2013 had little knowledge of the 2011 storm surge that left people in 'Uiha village homeless.[7] Only two people from Falemea village went to 'Uiha village after the event, and in interviews, few details could be provided by anyone else in Falemea of the damage sustained in their neighbouring village.

[7] The 2011 storm surge waves were felt only in 'Uiha village, and not in Falemea. 'Uiha village is towards the north-west coast, and is open to the main currents and larger waves. Falemea village is on the western coast and largely protected from storm surge waves by a reef.

This reflects the differing community cohesions of the two islands. In Fiji, the two villages firmly considered themselves to be one community on the island, whereas in Tonga, there was a much greater social (though not physical) separation between the two villages, and the 'island' identity was far less apparent. It is difficult to understand, from the short fieldwork time in each place, exactly why this is the case. The physical access between villages was easier in Tonga than Fiji, but the degree of social cohesion was opposite. Relative population sizes may have an impact. 'Uiha village has about 400-450 residents, compared with Delaivadra where about 20-30 people live, so perhaps the better connections the people in Delaivadra apparently have with their neighbouring village is because they need it. The cultural implications of the noble controlled village ('Uiha) versus the government controlled village (Falemea) may run deeper than is immediately obvious. Perhaps the stronger connections with the resource-rich Mormon church in Tonga decreases the need for two villages on a remote island to have strong inter-connections. Whatever the reality and the reasons behind it, logic would say that where a remote island community with a small population has only two villages, strong social capital and connections would be important for the island community as a whole.

Much was made on both islands of the community coming together after a disaster and working to help each other. Such a feeling of community cohesion is commonly seen in the immediate aftermath of disasters, however it is temporary (Ronan and Johnston, 2005). Evidence of this was apparent in the response to Cyclone Ian in Tonga. There was a feeling among some community members that they should be able to make sufficient repairs to their homes after a cyclone to be able to live in it again. The materials needed will have been blown away and damaged but they are retrievable and repairable. The conclusion was those who still lived in tents months after the event were simply lazy. The photo below shows one such couple, living in a tent in June 2014, six months after the cyclone (Photo 9.1: Limits to social capital).

Photo 9.1: Limits to social capital

It seems unlikely that this elderly couple would be considered lazy for failing to make sufficient repairs to their home. What is more likely is that they did not receive as much help as they needed in order to do this. The social capital and community cohesion immediately following the event seems to have limits, even for the elderly.

9.4 Community action

Alongside the perception of increasing expectations of aid, there is a sense of resilience and action from the communities. Aid organisations spoke of a strong resilience within communities, with strength drawn from the kinship ties. It is acknowledged that communities are thinking about disaster risk reduction, and issues such as where evacuation centres should be sensibly located. Humanitarian aid was explained by the most experienced as building on the responses of the community, that the people take the first steps themselves:

> *So first responder - basically anyone can be the first responder. But if you're the first responder without appreciating that the communities themselves start helping themselves after a disaster, then you're wrong* (Fiji, aid organisation representative).

Within the communities, people talked about taking action themselves both in disaster response, and in risk reduction. There was agreement from most that the community is responsible for starting to help themselves after a disaster, over and above cleaning up the village:

> *The first thing is the community, because the community they try to help after the cyclone, whatever they can do in rehabilitation. Try to rebuild the house, plant the root crops for the family, that's what he's saying. The community first* (Fiji, male villager, aged 46-59 years, through an interpreter).

Many villagers said that after a cyclone, they have to start cleaning up and making temporary shelters. This needs to be balanced with the view of an ex-villager in Fiji, who said that when he visited a few days after Cyclone Ami in 2003, most people were in the remains of their homes, too shell-shocked to be actively helping themselves.

Various community members on the island in Fiji also spoke about trying to do disaster risk reduction work themselves - "*Because we are trying to do something…government is the second thing, first community to do something*" (Fiji, male villager, aged 46-59 years). There were ideas and plans for building proper evacuation centres in the villages. In one village this seemed to be the idea of an individual, whereas in the other it was a plan being put into action with a community savings account, and a search for donor funding. The erosion of the beach is an issue the island has been wrestling with for a number of years, and there was much talk of constructing a seawall to help. Some villagers though seemed to be saying that a seawall was the responsibility of those living on the water's edge, rather than of the whole community. A couple of people had the idea that there should be community savings so that there is money in reserve to use after a cyclone, with each family contributing and perhaps a village committee to oversee it.

Some of these ideas seem to be just ideas at this stage, and it is not clear how much community buy-in there would be. It appears difficult to get projects like these off the ground without the support of the entire community.

In Tonga, the main form of community action taking place was the planting of trees along the shore as a way of helping to stop the erosion of the beach, and to take some of the force of cyclonic winds. However, I did not particularly notice young trees that looked to have been planted recently. Perhaps this community action took place years ago, since there were indeed plenty of older trees along the shoreline.

One of the issues raised by community members in Tonga was the lack of hardware and tools. I was told that "*cyclones motivate people to build stronger houses*" (Tonga, female villager, aged 39-45 years), but in reality, there is no hardware store in the Ha'apai region. This makes turning any goodwill around preparation and clean up into reality difficult without the basic hammer and nails required.

On both islands, the people were very pessimistic about the future, if climate change means that cyclones become more frequent or intense. There was general agreement that government aid was unlikely to be able to keep up, and that they would just have to rely on themselves. Some in Fiji talked about having to return to living in *bures* if the government stopped providing housing assistance.

Pessimism about the future in both communities however, was more about rising sea levels. In both communities, people felt that the sea would consume some (in Fiji) or all (in Tonga) of the village within the next 20-30 years, and that there was very little they could do about it. In both communities, there were murmurings about solutions, but this had not translated into much action as yet.

In the context of remote Indigenous communities in Australia, it has been noted that funding rarely goes directly to the local level, for work to be done and managed by locals according to the local needs (Bardsley and Wiseman, 2012). The same could be said of Fiji and Tonga. In Fiji, the community was actively lobbying the government for help to build a seawall, but without much success. In Tonga, there was talk in equal measure of needing a seawall for which there was no funding, or needing to relocate, for which there was no assistance to re-build. If the reason the lobbying for a seawall has been

unsuccessful is because it is not the best adaptive response, this reason has not been adequately explained to the residents, nor alternatives suggested.

There are also examples of the community acting entirely on its own, for relatively large scale projects. In ‘Uiha village in Tonga, the community established a savings plan, and saved enough money for a concrete block outside toilet to be built for every family. When the required amount was reached, the toilet blocks were built. They stood out as being the only consistent survivors of Cyclone Ian. It seems that this project was done entirely from within and by the community, and provides a good example of what is possible with sufficient leadership and goodwill from the entire community. It is likely that the equality of the outcome, affecting everyone in the village greatly assisted the success of the project, compared with something like the protection of the foreshore, which has immediate benefits to only those living on the shoreline.

9.5 Conclusion

Remoteness was an issue with similarities and differences in the two countries, reflecting the diversity of remote islands. In Fiji, the island was remote within the region it is located in. In Tonga, the island was within an entire region considered remote. Both communities experienced extended waits for humanitarian aid, and felt overlooked and under-prioritised, especially by governments. However, both also displayed some of the positive cultural aspects of remoteness, with strong social capital (albeit in different forms), and resilience among the communities. Even within countries consisting of multiple small islands, these small, remote, outer islands have experiences that are completely different to the main islands within their countries. They are viewed as being dependent by their own governments, but in many ways their circumstances and remoteness demands independence and resilience not required of those on the main islands. Those in isolated islands have the least possibility of being able to escape a disaster, but do not have the infrastructure or responses that recognise this, such as proper evacuation centres or preventative measures, and are last on the list to receive such things unless the situation is so dire that there is no choice. There is a clear connection to the

notion that even within island countries, remote islands may be remote from power centres (Kelman and Khan, 2013).

There may be evidence too of the weakening of inter-island relationships since both colonisation and the increase in disaster aid, with perceptions in Tonga of favouritism among the outer islands with some receiving more and earlier disaster aid than others.

The strength of community action was variable, with some ideas being implemented as concrete plans of action even for the long term, and others remaining just as talking points at the moment. The reasons for this variation are complex, and likely to include the local community level governance and informal systems, expectations, and perceived benefits both to the community and to individuals.

Chapter 10 – Perceptions of changes needed for the future

In a study of the adaptive capacity of disaster response systems in the Pacific, focusing on the humanitarian phases, Gero and colleagues found that in Fiji, the most important determinants were information and knowledge, risk perceptions, communication and relationships, financial capacity, leadership and governance and management (Gero, Fletcher, Rumsey et al., 2013). The current project also includes the recovery and rehabilitation phases of the response, the perspective of the affected communities, and the concept of expectations of aid, and found similar issues to be dominant.

Pacific island nations have traditionally not only embraced the oceans (for example, as being a supplier of abundant food), but have had the oceans so deeply embedded in their culture and identity, that there is reference to a 'sea of islands' - reflecting their resourcefulness and connections. This is in stark contrast to the more Western view of these islands as being 'islands in a sea' (Hau'ofa, 1994). However, the impacts of climate change have highlighted the pre-existing threatening nature of the oceans - exacerbating storm surges and tsunamis, and rising sea levels (Nunn, 2012).

10.1 Perceptions of aid availability in future

Ideas and opinions about the future availability of post-disaster aid in a world of increasing disasters varied. Most community members were pessimistic and considered that their best hope for the future is likely to be a return to self-reliance. Aid organisations and donor agencies though were much less consistent in responses.

Villagers in Fiji seemed to frame their response to this issue in terms of their disappointment and confusion around the differences in aid response to Cyclones Ami and Tomas. The reduction in aid for Tomas has left many feeling that aid is unpredictable and should not be relied upon in future.

There was a sense that any aid into the future would be a bonus, rather than conceiving that aid may be able to increase as disasters increase in years to come.

> *He thinks that if hurricanes are more severe and frequently occurring, he thinks the government and aid organisations can't do much assisting. From what he experienced in the previous cyclone, even Ami and Tomas, he saw there was a difference, and that was how many years apart. So if they are more frequent, he thinks there comes a time the government would not be able to provide assistance* (Fiji, male villager, aged 46-59 years, through an interpreter).

There was a consistent view expressed by villagers, that the primary reason for the differences in aid between Ami and Tomas was the change in government, from the previous democracy to the current interim military regime. Aid availability in future was often linked to whether or not there would be a return to democracy. This was especially evident among younger villagers, who have not had as much experience with cyclones in the past.

> *If it's not an elected government, they don't have money. So if the hurricane keeps going stronger, what will they do, because there will not be enough aid. Before there was plenty of aid, but this time no* (Fiji, male villager, aged 35-45 years).

In Tonga, the pessimism was also readily apparent, with most people thinking that aid will not be able to keep up in the future. But here, it was more related to the donor dependence of aid - "*cash on hand, that's the one thing. If no money, no aid*" (Tonga, male villager, aged 46-59 years).

Aid organisations and donor representatives presented a far more complex picture, as may be expected with their closer knowledge and experience of donation of aid funding. The one consistent message was that aid availability is and will continue to be very much donor dependent.

> *Basically nothing happens without the donors being involved. If there's no money coming in, there's no money coming in and there's no sense of urgency by any of these organisations to have a separate pool waiting there in case of any disasters. We'll always have to look to these donors* (Fiji, aid organisation representative).

Some thought more frequent and intense disasters would mean that the sources of donor funding would need to be expanded, since currently there is often a reliance on one or two countries predominately (Australia and New Zealand). Tonga may be working on that already, with requests for donor aid being made directly to China after Cyclone Ian in 2014 (Brown Pulu, 2014).

The most experienced aid organisation and donor agency representatives agreed that aid availability is not likely to decrease in the future. "*If the need is big enough, we'll find the money from somewhere, I have no doubt about that*" (Fiji, aid organisation representative). Post-disaster aid is seen as an attractive option for donors, to be seen to be doing something in the small 'window of opportunity' when the world's attention is on the event. Politics is seen as one of the main drivers of the 'business of response', and "*whatever the relationships, the figures of donations that are coming in from the outside, seem to be going up*" (Fiji, aid organisation representative). This may be especially the case for small developing countries such those in the Pacific, where a relatively small outlay for the donor in financial terms has a big impact in dollar per capita terms.

This is seen as being somewhat contradictory to the rhetoric about moving towards disaster risk reduction. A number of aid organisations and community members noted the difficulties in obtaining funding for risk reduction activities, which contrasts with the increasing availability of response aid. One aid organisation in particular, involved in doing disaster risk reduction work lamented the difficulties in attracting donor and government interest and funding in this type of work.

> *Because unfortunately people want to give money when it's in the news and after the fact. It's really not the effective way to do disaster management.*
>
> *We could prevent a lot of this harm for much less than they're spending on coming in after that fact* (Fiji, aid organisation representative).

Examples of community education and risk reduction work were provided by a few aid organisations however, they tended to be small projects with individual communities. The frustrations of those trying to pursue this work and seeing where the money flows were evident:

> *It's before the event which is the problem, but after the event it's quite good. People are pouring money like anything, they open one account and you will see half a million in that account within one week. People from overseas. Only if all those money, if they can pour in all those fund to educate people. Even to change the infrastructure to withstand what is coming* (Fiji, aid organisation representative).

This was noted in Tonga as well, with prevention and climate change adaptation funding being much more complicated, difficult to access, and from multiple sources:

> *I think the hardest part of it is getting the people to actually fund the priority actions. I think because donors, different donors, each has different requirements, different criteria, different timeframes for project proposals to be submitted. There are so many processes that the proposal has to go through before it is approved. So getting a proposal developed and getting a project proposal approved is a major problem for us* (Tonga, government representative).

Risk reduction work is simply not as attractive to donors, governments and aid organisations that are concerned with being seen to be doing something. It

is long term and requires planning and co-ordination of a different type to the fulfilling of immediate humanitarian needs after a disaster.

The responses may be more neutral than the positive responses from the communities and the media, invoked by doing disaster response work, where the 'hero factor' looms large.

The World Bank housing project following Cyclone Ian specifically includes some prevention funding, with money being allocated to 150 homes that did not sustain damage, for 'resilience strengthening', and to every home for sanitation and water facilities improvements. As well as addressing the essential housing needs, the project includes aims relating to the integration of DRM and CCA strategies, and the incorporation of prevention work and funding into the disaster response is a clever and efficient method of achieving the goal. The relative ease with which response funding is available and provided compared with prevention and development funding is highlighted in the project documentation that states: "As an emergency housing project, no economic or financial analysis was undertaken" (World Bank, 2014 p13).

The government recognises the contradictions and inefficiencies in the current way of operating. However, moving towards a new approach is a slow process. There is definitely a sense that some good climate change adaptation and disaster risk reduction work is being done, but it is not co-ordinated either at a project or policy level:

> *I'm really looking at re-aligning the policies, to the treaties, conventions and frameworks that we have ratified. You know, the Hyogo Framework and the Pacific Action Plan. Then after this, I'll go and talk to the Australian High Commission here - this is what I'm doing on disaster risk reduction, are there any funding available? I'm sure they would appreciate it. Probably that's something that we are learning as well. We confine our planning to what government can afford. But there is a bigger world out there, and that's what I'm working on right now* (Fiji, government representative).

The balancing act comes in being able to seek and obtain donor funding without losing control of the agenda. Both aid organisation and government representatives spoke of projects becoming donor driven rather than country driven, especially where the government, being so dependent on donor funds, puts the needs of the international relationship above the domestic problems:

> *This is where we are heading. If we don't be careful about that, then we are all geared towards the international communities. Whatever comes from them, you take it. And I think the political environment, they like that. Because they go and showcase that to the people in the communities* (Tonga, government representative).

One of the aspirations for the 2013-14 budget of the Fijian department responsible for natural disaster management, was to have funding allocated for disaster risk reduction and mitigation. Without such mechanisms in place, and/or the re-aligning of donor funds away from response, increasing risk reduction work is likely to at best remain sporadic and piecemeal, and at worst, to remain largely rhetoric.

10.2 Perceptions of relocation

Relocation of entire populations due to climate variability, natural hazards and climate change has already happened in at least five islands in at least four countries in the Indo-Pacific region (Gromilova, 2014). Fijian villages are asking to be relocated (Chand, 2014), more than one has already been relocated, and another 42 have been identified as needing to relocate within the next 10 years (Pacnews, 2014). While there is debate within academia about the extent to which planned relocation of entire islands will be required in the near future as adaptation options (Nurse, McLean, Agard et al., 2014), the issue is alive and current on the islands in Fiji and Tonga in this study. In fact the history of villages relocating as a direct result of disasters dates back in Fiji to at least 1931 (Yeo and Blong, 2010), and in Tonga to 1946 (UNCTAD Secretariat and UNDRO, 1983).

When discussing the impacts of climate change on the islands, including the most often cited rising sea levels and beach erosion, and the increases in cyclone activity, relocation was offered by a number of community respondents as an adaptation strategy, either within or away from the islands. There was a sense of hopelessness, with relocation being considered the only possible option, rather than the most attractive among multiple options. In one question, I asked what the island would be like looking 50 years into the future. The most common response from community members in both countries was that the houses closest to the shoreline did not have 50 years, but would be unviable within the next 10-20 years at the most.

> *If it happens like that, two or three years, we should leave this island…we should go to another place…I don't know, maybe sometimes the hurricane will come. What will we do if we stay here?* (Fiji, female villager, aged 35-45 years).

However, for the villagers living on the shoreline, relocation was the last resort. While there was an explicit acknowledgement that the erosion is quickly worsening and that their houses are in danger, the emotional ties to the house meant that moving did not seem as inevitable to them as it did to some living on higher ground.

> *I can tell that moving out from here is not really an option. It's like the second option. The first option is to do something if I can to stay here, but to match onto the climate changes that is happening now* (Fiji, male villager, aged 46-59 years).

In the two years since the main fieldwork was conducted, approximately another one to two metres of erosion has occurred from the shoreline in front of the house of this villager, leaving less than two metres from his door to the new high tide mark. The government has told him he must relocate, but without certainty on financial assistance, he is resisting any immediate move.

His house is built up from ground level on stilts, which he considers will buy him more time even when the water reaches the door. He is planning to re-start work on building up the beach to prevent further erosion - work which the entire community began and then abandoned when those living higher up lost interest and support for the project.

While very important to Pacific islanders, these issues are not unique to that region. The importance of sense of place in community resilience and its negative association with relocation strategies has been discussed in a rural Australian context (Boon, 2014).

The house where I stayed in Tonga was close to the shoreline, and gets inundated every king tide. But the family was not interested in being told they should move, insisting that the flooding would have to be daily from each high tide before they would consider it.

The government confirmed that in their climate change adaptation consultations with communities in Tonga, it is common for people to say they would prefer to die where they are than to leave, and would like to build a seawall rather than to relocate. This recognition of the challenges of environmental changes but resistance to relocation or migration as a solution has been found in outer islands of the Solomon Islands also (Birk and Rasmussen, 2014).

While the attachment of one's house to one's identity is undoubtedly real in both countries, for many, the logistical and financial realities of relocation provide the biggest impediment. Particularly in Tonga, where the entire island of 'Uiha is less than two metres above sea level, many people spoke of wanting to find somewhere else to live, but being unable to. There is some government assistance in Tonga to find alternative land, but no assistance to re-build. This is the end of the conversation for many people, who simply have no way of financially being able to afford to build another home elsewhere. A number of villagers said that they would move if it were made feasible to do so.

There are talks within government regarding relocating communities ('managed retreat'), but no real discussion about how to overcome the obstacles of land tenure and re-building expenses. The situation is frustrating also for organisations providing aid after disasters:

> *They just wait and ask for the government, but the government said they don't have money for that. So what they do?…They face the challenge everyday. They go back to their house because there is nowhere else to go. The water is always there. When there is a cyclone, the big wave come and ruin their house and all their cooking set and things outside. But you know what? They come back. They ask their relative to give them like a hand with their clothes and their cooking set. But they can't move. Why? They don't have much money. That's the challenge I face with the coastal. We distribute every time, every cyclone. Because why? The government don't help to relocate them. They want to move, but they can't go and sit under a tree* (Tonga, aid organisation representative).

In Fiji, the communities must contribute financially for relocating, with one village of 30 houses contributing about half the estimated FJD$500,000 cost of the move (Valemei, 2014). In order to achieve this, ten years of negotiations and planning were invested, and the project was assisted through the use of a 'cash for work' program with villagers providing labour and timber for the buildings (International Labour Organization, 2013). Projects such as this require leadership, time, good collaborations with government and aid organisations, and the co-operation of the entire community. This is not an easy combination to achieve but migration is happening anyway.

On both islands, but especially on 'Uiha island, many people migrate either to the cities on the main islands, or internationally, as has been the case for years. Everyone knew people who had moved or were planning to, but the stated reasons were related to education or employment opportunities rather than because of climate change impacts. Only one family in the Tongan village

was planning to move as a result of Cyclone Ian in 2014, with others flatly rejecting the suggestion. This reflects the multiple concerns of people in disaster-prone developing countries, such health, economics, and land-tenure considered as well as disaster risk and climate change impacts (López-Marrero and Yarnal, 2010). The longer-term effects are considered just that - longer term, and not necessarily directly connected to decisions made today.

It has been suggested that migration as a climate change adaptation option has received little policy and planning attention, perhaps because it is viewed as failed adaptation. But given the migration that happens already (albeit for other reasons) and the likelihood that it will be required further into the future, the benefits of and barriers to the current migration should be recognised and investigated (Birk and Rasmussen, 2014).

10.3 Perceptions of preparation and education as resilience

The issue of preparing for a cyclone or other disaster was a prominent feature of interviews with each group, but in different ways. On the islands, villagers talked about preparation mainly in terms of housing - tie down the roof, nail window shutters or cover windows with tin or board. Fewer mentioned other details like torches with batteries, firewood, drinking water, protection of crops. A couple of villagers said that if there was time, they would go to the main island to go shopping to boost their supply of food. There was a view among the elders in the community that many people are not really prepared until after the event, because they are not thinking about cyclones enough. One person in Fiji had the idea that there should be a village meeting before the cyclone comes, to talk about what needed to be done.

There were mixed views among aid organisations about whether community preparation is better now than in the past. Some said that the general level of knowledge within communities has improved, while others thought that faster aid and more of it, combined with, particularly in Tonga, a lack of recent experience with larger cyclones has meant that people do not put that knowledge into practice. One villager in Tonga spoke of protecting his crops following a cyclone warning, only to be laughed at by others when the cyclone altered course and missed them.

A key difference in the perspective of the aid organisations and government, from that of the community, is in the temporal scale of 'preparation'. In the community it was usually thought about as in the time following the disaster warning. Aid organisations and government representatives talked about preparation in the longer term, with issues like governance arrangements and logistics, as well as community training in preparation and awareness. Preparation for the whole disaster season was seen as being vital. While many villagers talked about the cyclone season as an entity, only some translated this into continual preparation such as in terms of crop planting. Training in this area is seen as very helpful, but that there is not enough of it, and there was a consensus that community preparation should be a focus in the future:

> *What I'd like to see is more focus on preparedness. Like everywhere in the world, it's a 'nice to have' as opposed to an 'absolute requirement*' (Fiji, aid organisation representative).

Many aid organisations nominated increased community preparation and awareness as their number one item for changes in the disaster response system into the future. The importance of ongoing training was mentioned, with follow up visits, rather than one-off community based training, which at the village level may be forgotten.

A government representative in Fiji brought responsibility into the issue of community preparation and training:

> *In the Pacific framework for action plan, we have one of the thematic areas is the underlying risk factors. People need to take responsibility as well. People need to take ownership as well* (Fiji, government representative).

Aid organisations and governments talked about community preparation directly in terms of expectations of aid:

> *But if we're able to prepare people to be a bit more resilient, and to reduce potential risks that they can forecast, it will make the work of these people a whole lot easier when it comes to disasters.*

> *Because the norm right now is that after disasters, people expect, people in evacuation centres expect food the very same day and things. But if they were more prepared, they would know that this is disaster season and you should always have things prepared* (Fiji, aid organisation representative).

Humanitarian aid is seen by the more experienced organisations delivering it, as something that should complement community action, not be in place of it. Without this, the 'need' for humanitarian aid increases significantly, and aid organisations become limited to the role of 'professional responders', rather than also trying to reduce risk.

There is a cross over between preparation and prevention. Aid organisations talked about needing to look at the longer term and instituting behavioural change in both Fiji and Tonga towards risk reduction and prevention as a method of being prepared for disasters. There is a perceived need to bring this into the thinking across government and development planning. A government representative said, "*Development has occurred over the years in Fiji, and development comes with its price*". The need for planning where buildings and dwellings should go and to what standard of construction was clear, but this was not necessarily translated into action.

There is a movement towards disaster risk reduction, but it is piecemeal and appears under many labels currently. The lack of co-ordination and status (e.g. National budget) of this work means that organisations do not know what each other is doing in this area. Mechanisms and policies for making this work easier are not in place. There is a view however, that communities are moving towards a disaster risk reduction approach, even if they do not apply that label to their thinking:

> *A lot of communities are thinking about it already. And whether they've read all the material and know the right terminology, they're thinking about it* (Fiji, aid organisation representative).

There was some evidence of this in my study. While there was a strong focus in the community on the need for a seawall to deal with rising sea levels and beach erosion, a couple of people mentioned other types of risk reduction activities. The type of crops planted is being thought about in a longer term perspective of disaster risk:

> *We are encouraging other people to plant another type of root crop they stay longer. It can stay for three or four years. Like you plant it this year, you won't uproot it this year. Maybe next year. Then maybe you take away just one or 2 and then bury it again. It will give a lot more next year. That's what we are encouraging people to do, preparing for the cyclone* (Fiji, female villager, aged 35-45 years).

10.4 Perceptions of climate change adaptation options

In all the interviews I conducted, with government, aid organisations and the community in both Fiji and Tonga, people were aware of climate change and its impacts, and were thinking about adaptation measures. On isolated islands, the environment takes on much more importance than for those living in cities:

> *Yes, it's very different now. I'm now 69…when I looking back to when I was 30, it is very different. I also live beside the ocean and I understand what is happening…the ocean is my neighbour* (Tonga, male villager, aged 60+).

The impacts of climate change noted by all groups included differences in the disaster 'season', in the intensity of disasters, and accelerating sea level rise. In Tonga, the villagers talked about a neighbouring island that in their youth they walked to at low tide, but which was now a boat ride away. Some community members even noted changes in the actual cyclones:

> *That's the cyclone, the direction where the cyclone comes. That was before, but now it changes. Now it can be from any direction. Before it was only one. November, December, January, then no more cyclones. That was before. But now anytime. And the direction the wind comes, is just any direction* (Fiji, male villager, aged 60+ years).

There was agreement from all groups that the climate change impacts being experienced mean there will have to be adaptations made. Aid organisations and government representatives each mentioned the need to think more analytically and strategically about responses to disasters to avoid just patching things up more often. One villager in Fiji who has seen many cyclones talked about the futility of making patch repairs to houses that have been badly damaged in a cyclone. She said she has seen the same houses have to be repaired over and over again, and that it would be more efficient to just rebuild in the first place. This echoes the thoughts of post-disaster reconstruction housing specialists working for United Kingdom-based organisations, who acknowledged that time constraints often mean that mitigation is not done (Hayles, 2010). However, the unsustainability of this approach is being recognised by government officials also:

> *Climate change? Very much. We have to be very quick with what we do. The thing is that people need to be very analytical. Gone are the times when I would say - oh, this is how we used to do it. Things have changed a lot* (Fiji, government representative).

Both government and some aid organisations talked about changing their operations as a direct result of seeing an increase in the frequency and intensity of natural disasters in their country:

> *But now we are starting to build capacity because of the frequency of the natural disasters. Before because there was once in a while a cyclone or a flood. We just responded at the time but were not really serious about*

> *building capacity. But now because of the frequency of the flooding that happens, especially this year, and the change in weather patterns and everything, we are now taking that role seriously and are building capacity to be able to respond effectively* (Fiji, aid organisation representative)
>
> *We're working with them now. Next week we're conducting training with Divisional Planning Officers and some others to work on logistics, and that is the first time we're doing it, because of the strength and intensity and frequency of the disasters we're facing* (Fiji, government representative).

Translating the rhetoric of a need to work differently into action though is difficult and slow. The timing of such a transition is problematic. In the immediate aftermath of an event, there is not really the time available to do the analysis. Outside of the humanitarian and immediate response though, there is not necessarily the motivation or funding available.

> *When this last flooding came up and I was pitching what we could do to help. I said we're happy to help out and these people need help, but I'm just wondering - this is happening every year now, so is anyone stepping back and saying can we spend a larger amount of money to see how we can try to assess how we can prevent this? Do we need to move people, do we need to change irrigation, do we have to change the way timber is being unsustainably harvested? What are the causes and what are the real solutions? Because we're just going to do this every year and that's just sort of ridiculous. He agreed. I think they are trying to encourage talks with government about looking at things that way. I'm not sure how much headway they're making* (Fiji, aid organisation representative).

Adaptation measures and projects cited as examples included improvements to water systems to diversify water sources, relocation of communities, and the extension of the building code from urban to rural areas. Currently in Fiji, the building code is not legally binding in rural areas, and one suggested adaptation measure is to over time, rectify this omission and then make disaster relief housing dependent upon compliance. However, not all development and adaptation strategies had good levels of buy-in from the communities. Where there was an immediate perceived benefit to the community, there were good levels of support, such as the community fishing project in Tonga (see section 4.5, Gender issues). Where these benefits were less obvious, the support was not there. In Delaivadra, the smaller village on Druadrua island in Fiji, a composting toilet in the middle of the village gathered dust - 'public toilets' on the island were in the mangroves, where people could not see those using them.

Community members on both islands often spoke of the need for a seawall to be built in their community, because of the increasing erosion of the beach. Past decisions, in the name of 'development', have not assisted the communities. In Fiji, colonial administrators demanded the clearing of mangroves from village fronts - a decision that has resulted in erosion and increased sedimentation (Veitayaki, 2006). On Druadrua island, the evidence of this practice and its results was clear. The erosion, which has been occurring for decades, is accelerating and when cyclones coincide with high tides, the storm surge has been known to take more than one metre of beach with it. There was general agreement that the houses on the shoreline of the island in Fiji are in increasing danger and are likely to be washed away completely within the next 20 or so years. That is with just the rising sea levels. A couple of strong storm surges would be enough to potentially wash some houses away, since there is one house with water already lapping at the timbers, and a few less than five metres from the high tide shoreline. In the photos over the page, the same house is shown in 2012 and 2014. In just two years, the rocks in the groyne (or breakwater) have sunk into the sand, and the high tide mark has moved well under the house, washing away the remnants of foreshore in front (see Photos 10.1 and 10.2: Druadrua foreshore 2012 and 2014).

Photo 10.1: Druadrua foreshore 2012

Photo 10.2: Druadrua foreshore 2014

The community is keenly aware of what is happening, and that the people in those homes affected are running out of both time and options:

> *His idea is there are two things that can be done. Either recreate that place again, or those people to move somewhere. Those are the two things to be done* (Fiji, male villager, aged 46-59 years, through an interpreter).

Within the community however, there was some debate about whose responsibility it was to build the longed for seawall. Some thought that if the whole village was not involved, then it was up to those families living on the shoreline. While there are efforts underway now, such as creating groynes, with varying degrees of success, a seawall is agreed upon as the ultimate, but too expensive, solution. I was told that there have been requests to the government for the past five to seven years for funding and assistance in this adaptation project without a response so far that is seen as satisfactory to the community.

The clear calls for the construction of seawalls on both islands, but especially on Druadrua, should be put in the context of findings that seawalls are not always the best solution, and are often ineffective. Many seawalls last for only 18-24 months before collapsing, and repair work is usually expensive and limited (Nunn, 2012). A seawall is an adaptation option community members know and therefore see as desirable. Formal assessments of other engineering or natural solutions have not been conducted. Indeed, there have been unintended consequences to the building of a seawall on Lifuka island in Tonga, which may render it maladaptive. Lifuka came to the attention of many in the climate change adaptation field when an earthquake caused the Western side of the island to lower by 23cm in 2006, resulting in a massive and instant sea level rise. This was quickly seen as a preview of the future for Pacific islands. A seawall was constructed to protect the hospital, and then subsequently, the hospital was relocated further inland. Both the actual construction of the wall and its location has made houses further along the shoreline more vulnerable. The displacement of the water has increased erosion, and sand mining from the beach during the construction further

exacerbated the problem. Houses where previously the water was close are now being inundated daily, and need to relocate.

As referred to in the quote above, relocation is considered the alternative solution by the community. Some spoke of this in relation to the homes closest to the shore but for others it was a realistic future scenario for the entire island. Relocation though is not simple. It was recognised by some aid organisations that relocation is expensive, and often involves conflict-inciting traditional land ownership issues. Some community members expressed frustration with the suggestion that they should move their homes. As well as the emotional and historical ties to the houses, some of which have been occupied by the same family for generations, the logistical, practical and cost implications are serious concerns:

> *One time I was with them when they came here after Cyclone Gavin. They just come and say - you should go there to the other side of the island, change your place, or go somewhere. That made me very angry with them. Why do they come and say that to us? To change where I am, somewhere on top to build my house. If they can tell us that to change that, to build my house on top of where the waves can't strike, but they don't give me any help, what's the use of coming and giving me that advice?*
> (Fiji, male villager, aged 46-59 years).

In Tonga, government and aid organisation representatives spoke of higher level and more general problems with tackling climate change adaptation issues. An aid organisation representative spoke of the difficulties of enhancing community preparation for climate change impacts that are slower onset (than, for example, cyclones) and of which there is less experience. Another said that motivation in communities is a big problem because the more you explain about climate change, the more apparent it becomes that despite local efforts, others around the world are still contributing to the problem so then people lose hope.

> *Climate change is…I've been telling the outer islands, that we are on the receiving end of it. We didn't create it* (Tonga, government representative).

This core inequality, which is fundamental to climate change, does not go unrecognised by many in the field throughout the world. However, while those in the countries who did create the problem talk about this issue, those 'on the receiving end of it' must act now.

Clark and colleagues build on this idea of environmental justice, linking it with disasters. Both areas acknowledge the disproportionate susceptibility of the under-privileged minorities and disempowered social groups, with disadvantage linked to vulnerability - exposure, susceptibility and capacity to recover. Extending this thinking, a logical consequence of anthropogenic climate change is that there is a social element to the actual hazard, as well as to its becoming a disaster (Clark, Chhotray and Few, 2013).

10.5 Conclusion

Prevention and preparation are seen as key for all participant groups in this study, with a recognised need for more community education in future. Combined with this is the pessimism displayed by many of the remote islanders about whether and what government assistance is likely to be available. The limits to aid (either political or donor-driven, or both) are apparent to these communities, especially for disaster prevention or climate change adaptation strategies.

Both communities wanted a seawall to be built to protect them from the visibly rising sea level and ultimately, for assistance in relocating to a safer place to live. Realistically however, this was viewed as being unlikely in the foreseeable future. This may be a reflection of the recognition by the respective governments that alternatives to seawalls may be more effective and efficient. Indeed, a government representative in Tonga confirmed that they were trialling alternatives, such as gabion baskets, following advice that seawalls are often short-lived and expensive. For the communities though, these details are absent and there is only the waiting.

The idea of relocation was resisted by many and considered to be an option of last resort. People are living with regular inundation of their homes and simply coping with it rather than leaving. However, the financial realities of actually moving to another place were apparent in the decision making, with people on both islands saying that government assistance to find new land and rebuild would make relocation seem like an available option.

Chapter 11 - Issues of adaptive capacity of disaster response systems in Fiji and Tonga

This chapter will discuss the issues raised in the results around the capacity to achieve adaptation and resilience. An analysis is presented of the focus of aid funding, governance, expectations, remoteness, the alignment of perspectives of the participant groups in the study and progress being made. The experience of community members on remote islands presents a new and different perspective on disaster management and response, and climate change adaptation. Issues prominent in the disaster literature around distribution and effectiveness of aid, dependence on aid, resilience, vulnerability, and difficulties in aligning disaster risk management with climate change adaptation are experienced in a different way on a remote island community.

11.1 The move towards preparation and prevention

There was very little agreement between all three participant groups in this study, but the one area of consistent agreement was the importance of preparation. Most people agree that those who have experienced and remember experiencing a severe cyclone take warnings most seriously, and prepare the best. This is supported by the views of the younger community members in Tonga who agreed that they largely ignored the warnings for Cyclone Ian in January 2014, but will know better next time. This means that predictions of climate change do not bode well for future community preparations because at any one time there will be more people alive who have no memory of a big cyclone. This is especially pertinent for demographically young populations, such as in Fiji and Tonga.

The populations on the remote islands are almost devoid of people in their late teens, twenties and even thirties. Young people leave the islands for high school education and work opportunities, with those who do return to live there again generally not doing so until years later. Most of the younger people who do remain seemed to be the youngest child, living at home to care for their now elderly parents. The strong presence of elders may leave the remote islands in a

slightly better position in terms of community memory of strong cyclones, but will rely on the knowledge of the elders being respected and passed on. Social memory is said to be an important element of resilience (Carpenter et al., 2012). The current systems, both formal and informal, are not able to readily adapt to and cope with this likely reduction in social memory of cyclones, because the money flows into emergency response, not the longer term risk reduction and preparedness.

The efforts put into preparation for an oncoming event are one of the biggest factors in the outcome. Essential and ongoing challenges nominated by all groups were timely and accurate warnings being successfully delivered to the right communities, and the responsiveness of the communities to such warnings. This is recognised by government and aid organisations, and community awareness training is frequently offered as the disaster season approaches each year. However, more can always be done, not only in doing this type of training but in ensuring that it is appropriate to the needs of each community. Following the 2009 tsunami in Tonga, warning signs were placed in villages across the country (see photo 11.1 below).

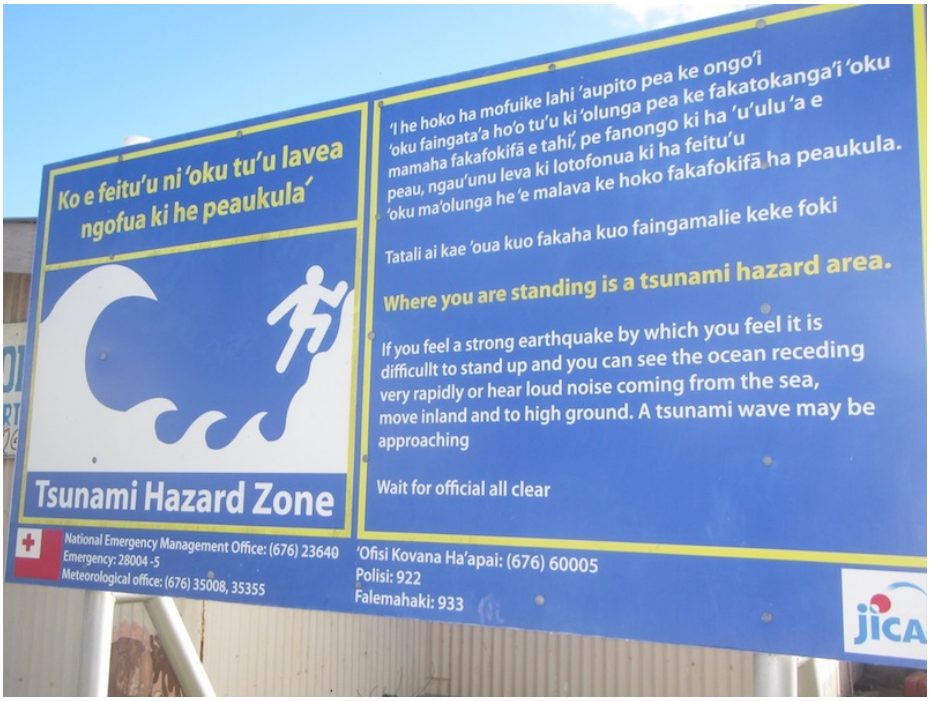

Photo 11.1: Tsunami warning sign on 'Uiha island

The intention was clearly right - to provide information to communities about tsunamis and how to escape them. However, the advice in the sign is to 'move inland and to high ground'. It is a running joke on 'Uiha island that there is no-where high since the entire island is less than two metres above sea level, and is so small, that moving inland would have you in the water on the other side of the island. The advice provided on this sign is neither relevant nor helpful to people on islands such as this. Country-wide disaster preparation programs need to be tailored to suit each place in which they are implemented, rather than simply being a 'one-size-fits-all' approach. Despite the inappropriateness of the tsunami warning sign to this particular island, it probably does have the potential to achieve a slightly different purpose - that of maintaining attention on disaster preparedness throughout the year.

Most people agreed that extreme weather events are not usually discussed outside of disaster season (see section 4.1, thinking about cyclones), which has several potential flow on effects, particularly for preparation. Firstly for the communities, it allows time to 'forget', and requires preparation for disaster to be re-introduced as a concept annually, rather than being a normalised part of life in at-risk communities. Secondly, it cements the idea of a 'disaster season', despite perceptions from some that the season is either changing or cannot be relied upon any more, and that disasters can happen at any time. This has the potential to increase the risk that events happening outside this 'season' will catch people off-guard, and be more likely to turn into disasters. For aid organisations and governments, there is a similar risk of a focus on preparation during the 'season' leading to a lack thereof outside that time. The line between a sensible concentration of efforts during the time extreme weather events are most likely to happen, and a totality of efforts being restricted to the 'season' may be a fine one.

Another important implication of the lack of attention to disasters outside of the perceived disaster season is that it is precisely during the more quiet times of the year, that the opportunity is available to dedicate to prevention. Debriefs following the events are not new, but they are inconsistent and often only done after the biggest events. For adaptive governance and a resilient system, such debriefs should be routine so that lessons learned can be gathered together.

This is important for smoothing out operational concerns and obstacles. However, this is still different to issues of prevention. The emergency response and rehabilitation phases may be understandably chaotic, and it would be inappropriate during those phases to wait until longer-term issues of prevention are considered before supplying relief to suffering communities.

Prevention, and the ways in which it might alter the response and rehabilitation phases needs to be given due consideration and thought when there are not current emergencies. Rather, prevention should be part of the planning for the response and rehabilitation phases. Where for example, the Committees responsible for disaster management with all the key players, both government and non-government represented, do not meet until there is an emergency warning activated, there is no structure available for those conversations to take place. It is admirable and visionary to insist that disaster relief housing be built to withstand floods and cyclonic winds, and located to minimise risk within acceptable boundaries of the communities. It is difficult to see communities not wanting that to happen. However, if it takes an extra two to three years for the relief housing to be built, while those issues are figured out, the reception from communities is unlikely to be as positive.

Certainly some of the issues will always be location and time dependent and need to be addressed case-by-case. But a certain amount of planning and preparation can be done ahead of time. ‘How can we make this happen?’ should be a question asked during the quiet times, so that during the chaotic times, the task is translating the answer into ‘how can we make this happen here and now?’. There are always pockets of work being done on prevention issues like the example above, by the government, aid organisations and the communities themselves. However, the recognition and integration of this work is much more difficult without the governance structures in place to allow for it.

Of course, much of the prevention work requires funding from sources separate to the response and rehabilitation phase money. Disaster management experts and aid organisations have noted the need for flexible funding systems, and the lack of funding for preparedness and prevention phases of the disaster management cycle (Pathirage et al., 2012, Aeberhard, 2008).

In Australia, there have been calls from practitioners for funding to be diverted from relief to mitigation, with the recognition that disaster relief in its current form does not necessarily increase resilience to disasters (Wenger, Hussey and Pittock, 2013). It has been noted that international adaptation funding mechanisms currently do not adequately address the causes of vulnerability or support systems transformation (Kuruppu and Willie, 2014).

Historically there has been little to no funding specifically allocated to disaster prevention in Fiji (NDMO Fiji, 2011). This changed in the 2013 Fijian national budget for the first time. As climate change adaptation and disaster risk reduction areas are brought together in the Pacific, increasingly, the disaster prevention funding will come from climate change adaptation funding sources. As noted by all participant groups, this money is much more difficult to access than disaster response and rehabilitation funding. This problem has been recognised in the literature, with the institutions such as the Asian Development Bank (ADB), and the Overseas Development Institute (ODI) reporting on how to increase investment in disaster risk reduction work.

International funding for disaster response is neither simple nor consistent. The funding allocated to relief work has been found to be disproportionate from one event to the next, and to bear little relationship to the number of people affected or the amount of damages (Ferris and Petz, 2011). Meanwhile, an ODI analysis of development aid over the 20 year period 1991-2010 found that disaster response funding increased massively, but mainly in reconstruction and rehabilitation, with little increase in the area of risk reduction. Disaster losses in developing countries amount to the equivalent of about one third of the international development aid spending, yet only 40c from every $100 of aid money is spent reducing the risk of them. Nearly two thirds of disaster funding is spent on the emergency response, over one fifth on reconstruction and rehabilitation and only one eighth on risk reduction. For the majority of low-income countries, the equation is worse, with $160,000 in disaster response received for every $1 of disaster risk reduction (Kellett and Caravani, 2013). Recognition of the problem, and the need to shift focus from reactive emergency aid to proactive risk management investment is not new,

with calls for increased spending on disaster prevention having been made over a number of years (Syroka and Wilcox, 2006).

While full details are not yet available since the response is still in action, recent funding announcements following Tropical Cyclone Ian in Tonga, suggest that the balance has not tipped far yet. The first draft response plan estimates the total requirements for immediate needs, recovery and initial reconstruction over the following 12-18 months to be TOP90.2 million (equivalent to approximately AUD53.6 million, or 11% of Tonga's GDP), of which TOP83.4 million was unmet at the time (National Emergency Operations Committee Government of the Kingdom of Tonga, 2014). At around the same time, the ADB signed off on a grant of TOP23 million for a Climate Resilience Sector Project for Tonga to operate from 2014- December 2018. This equates to about TOP4.6 million per year for five years.

If most people agree more should be spent on prevention and preparation, why the difference? There are several complex and interconnected reasons why the current system persists. Firstly, in order to attract funding, the goal or outcome must be attractive to funders:

> The low visibility of disaster risk reduction work in comparison to emergency relief has made it unattractive for governments chasing votes and international recognition and for non-governmental organisations dependent on disasters for funding (Schipper and Pelling, 2006, p25)

> The absence of an immediate guaranteed political payoff for a risk reduction investment tends to discourage the assignment of political and financial priority to the problem…Greater rewards are accorded to those leaders who visibly assign attention and resources to respond to disasters than to those who labour unseen to reduce their root causes (Basher, 2008, p.937-8).

Politically then, countries without short election cycles should theoretically be in a better position to make long term decisions, where there is political will to do so. It may be that the 2006 coup in Fiji, and the absence of democratic elections during the following eight years has provided an opportunity for Fiji in this regard and may have been an enabling factor in the allocation of disaster prevention funding in the 2013 budget.

The issue of incentives however, seems like an almost intractable problem, operating in a variety of ways to reinforce aid allocation strategies and risk. While global '24/7' media exists, humanitarian aid will always present a good public relations opportunity. Media attention to disasters may be positively related to the volume of aid, but not necessarily to the level of need (Franks, 2008). Also, incentives sometimes exist to actually increase rather than decrease risk, for example through development on vulnerable and high risk locations (Vorhies, 2012). This means that changing the incentives must address both decreasing risk, and not increasing it elsewhere.

In a vicious cycle, the greater the investment in emergency response, the less the incentive to invest in prevention: "*In the event of a government's being ill prepared for a disaster, international relief effectively rewards bad behaviour on the part of the poor countries' governments*" (Cohen and Werker, 2008), p796). This links back to the 'crowding-out' effect of aid on disaster mitigation (Raschky and Schwindt, 2009). It is difficult to say whether this effect is evident in this study. While the community members interviewed were unsure about the availability of future disaster response aid, the civil society organisations and governments saw no reason for concern, perceiving the receipt of future disaster response aid as being reliable. Remote communities therefore may alter their behaviours and have increased incentive to invest in prevention strategies due to uncertainty about future response aid, but the government and aid organisations may not have this incentive.

There is definitely a dependence on international donor funding, particularly in Tonga, which may alter the incentives and the influence of particular types of aid on those incentives. It may be that a 'crowding-out' effect is more relevant for wealthier countries where there realistically are internal budget allocation decisions being made. The Tongan government can and does have

policies and priorities, but in practice reliance on donor funding is overwhelming and it usually comes with its own priorities and conditions. In Fiji, there is an expectation that funding will continue to be donated to and from both formal and informal sources, and while steps are being made towards the prioritisation of prevention work, in practice there is little time or energy available for it. With an increase in disasters already being felt in the country, the focus is on co-ordinating the disaster responses, and trying to keep up with recovery and rehabilitation from one event before the next one occurs.

Added to this, is the issue of the structure of funding availability and allocation. In contrast to humanitarian aid funding, which is usually immediately allocated to perceived and actual need, risk reduction and prevention funding is more likely to be subject to stringent tests and approvals. There is currently little empirical evidence that investment in resilience is more cost effective than a humanitarian response (Venton, Fitzgibbon, Shitarek et al., 2012). However, this may be an artefact of the type of evidence economists want. Cost benefit analyses are difficult to do in this area where some of the costs are indirect, such as the impact on economy, and benefits are usually the avoidance of possible future costs (Vorhies, 2012).

The ADB looked at the economics of climate change in six Pacific island countries including Fiji and recommended adopting a risk-based approach to adaptation and disaster risk management, prioritising action on climate change and increasing the cost-efficiency of adaptation measures. Improved access to climate finance and strong co-ordination and cooperation with regional partners were also seen as critical (Asian Development Bank, 2013).

The rise of the non-traditional aid organisations represents both an opportunity and a risk in terms of trying to shift the focus from response to prevention. As an opportunity, funders may be able to utilise the extra resources informally entering the disaster response sphere to free up their resources for prevention. With disaster risk reduction funding increasingly being sourced through climate adaptation financing (Kellett and Caravani, 2013), there may be better availability of funds, but with the associated problems of accessibility. As a risk though, the funders may equally see this as

an opportunity to reduce rather than divert their disaster funding - a type of 'crowding-out' effect.

There are examples now of civil society organisations embracing and funding prevention activities, specifically in the field of disaster prevention, such as a Red Cross pilot project to fund prevention measures based on forecast weather hazards in Uganda. This project focuses on seasonal forecasts about three months in advance. Prevention actions might include prepositioning aid supplies, or selection of crops for planting based on rain forecasts. Projects such as this start to establish a middle ground between response and prevention that make the prevention activities more attractive to funders, by targeting them to places and times of heightened disaster risk (Coughlan, van den Hurk, van Aalst et al., 2014).

11.2 Expectations

The expectations the community, aid organisations and government have of each other are high and somewhat conflicting, but held with pessimism. There is a clear separation, particularly for the community and aid organisations, between their expectations and their assessments of whether or not those expectations will be met. This is in keeping with the distinction made between expectations of intention and expectations of capability (Chamlee-Wright and Storr, 2010). There may, for example, be high expectations that one group would like to provide certain aid, but low expectations that they are capable of doing so.

The community and aid organisations both expect the government to be responsible for the timely provision of aid to the affected communities. Neither group has confidence that this will occur however. Community expectations of aid are based on experience - increasing as receipts of aid have increased, and dampening where aid receipt is inconsistent. The communities rely on each other, extended family elsewhere, churches (especially in Tonga) and their own resilience during the wait for aid. They are uncertain how long aid will take to arrive and what it will consist of if and when it does arrive. In Fiji, inconsistencies between different events have contributed to this uncertainty.

In Tonga, both the community's acknowledgement of the government's dependence on foreign donors and changing policies for different events are contributors. The very existence and participation of some of the organisations newer to aid distribution is testament to that sector's lack of confidence that the governments are going to deliver timely aid to all affected communities. This was openly stated by the organisations and acknowledged by the governments.

The communities on the remote islands have lower expectations of aid organisations than of government. They see the government as being responsible for the provision of aid and their welfare post-disaster, whereas aid organisations are viewed differently. Their work is seen as being voluntary and without payment or reward and thus, outside the realm of expectation or criticism. Sometimes it was clear that there were criticisms to be made, but the community members stated their objections to doing so, saying for example, 'it is the Red Cross so who can complain?'

The governments expect the communities to prepare and be able to look after themselves in the immediate aftermath of a disaster. For remote island communities, these expectations are heightened, and the length of time they are expected to cope before aid arrives is increased compared with urban communities. The Fijian policy to provide food and water to non-remote evacuation centres within 48 hours but not to the remote areas is a practical application of this differential. There are clearly cost effectiveness issues making this a rational response from the government. However, despite any rationality, it may represent a shift in the responsibility from the government to the community for remote islands, in a way that does not happen for non-remote areas. The commitment to community awareness programs and training around disaster preparedness may be indicative of pessimism around the expectation that communities will be prepared. At the very least it is recognition that such preparedness requires ongoing support.

The governments also have expectations of the aid organisations around linking into the formal response system. Again, this expectation is held with much pessimism, especially in Fiji where the number of organisation operating outside the formal system has in recent years been high. In Fiji, there is a policy shift from the government towards attempting to enforce the

expectation, with threats of de-registration for organisations that continued to operate in isolation from the formal system. These moves are very recent, and it remains to be seen what, if any, effect they have.

The other significant element of expectations of aid is around equality and fulfilling needs. For the communities, there was a distinct disconnect between these two key issues. Aid seemed to be serving multiple purposes for these remote communities. Firstly, it was definitely about fulfilling needs, for example, with those who had lost everything needing basic necessities like shelter and clothing. Secondly, aid provides some recognition of the experience the entire community has been through, for example with those who were physically and materially unaffected expecting to receive a share of any aid. Finally, aid eases the pressure during a difficult time, for example with food aid representing time to do other recovery activities.

These three roles of aid for the communities are not mutually exclusive, and it is in the areas of overlap that the expectations are most difficult to make sense of. It may be that especially in group-oriented (rather than individual-oriented) communities such as these, the second role of recognition has a level of importance that clashes with donor dependent, needs-based aid. The whole community has been through the experience of the cyclone, presumably all have been involved in community-level cleaning up and recovery, and all feel the distress of the experience. This may represent the communities and the aid organisations having different perceptions of which level of the Maslow hierarchy aid is supposed to be fulfilling. The aid organisations, especially those that are western-based or dependent, are likely to see aid as addressing the lowest level of needs - physiological. However, for the communities, it may be that the aid is addressing higher-order needs. Where aid, especially food aid is inconsistent, slow to arrive, and unreliable (including in quality), communities would be foolish to rely on it for their survival. Communities may instead to a certain extent be looking for aid based on recognition of this community-level need, rather than on the individual household assessment based need.

This links back to the idea that communities expect to receive some aid - not necessarily to fulfil their survival needs, but something even to barter or sell. If disasters are an opportunity to receive aid, and there is so much of it around, how much should it matter whether your roof flew off or not? Some aid organisations clearly do attempt to take this perspective into account, providing particular types of aid to every family in an affected community, based on being part of that community, not on individual-level damage. Others do not. Obviously this is easier to do in smaller communities where the inclusion of those 'not affected' does not increase the requirements by thousands.

Perhaps this is a complex mask for simple greed. There was no clear answer to this question in this research, and participants from both countries, from communities and aid organisations would argue fiercely for both points of view. The conclusion must be however, that cultural issues such as these complicate matters significantly when an aid system driven by western values of individualism meets more community based cultures. These issues and complications cannot be ignored in discussions of what aid communities expect to receive and why.

There is also a link from expectations to resilience and community action that should be acknowledged. It was admitted on both islands that people have learned that making repairs before the damage assessments have been done means you risk not receiving aid. The individual-based approach does serve as a disincentive to community action. It may be that community-level aid responses would be a greater incentive for community-level action in community-oriented cultures. Different values may account for differences in what is viewed as rational and logical by governments compared with communities (Adger, Barnett, Brown et al., 2013)

The issues around poverty and dependence are very complex and bound up in culture. One the one hand, there is clear poverty. People wear shoes that are barely held together, clothes that are torn and dirty, and live in housing that lacks good sanitation and hygiene, and is in a constant state of disrepair. On the other hand though, people are dressed immaculately to attend church every week, watch SkyPacific on their flatscreen TVs, and play games on their tablets. Money cannot be found to buy a pump for the footballs and netballs at

the school that are used daily by both the school children and broader community, yet, according to three separate discussions with villagers, it is possible to earn FJD700-1000 a week on an island where you grow and catch your own food, there are no mortgages, and daily expenses are minimal.

The culture impacts on these issues in multiple ways. Firstly, the concept of community means that one person cannot work hard, save their money, and build themselves a very strong, new house. Everyone must be treated equally on the island, so once you finished your house, you would then need to be prepared for everyone to be asking you to build houses for them too. So - I cannot afford a new house - merges with - I cannot afford a new house for everyone. The patriarchal nature of the society impacts too. Money, time and energy are spent on fishing, and all the associated perks and displays of wealth and success. If you are a good fisherman (and this is predominately the domain of the men here - women mostly do fishing from the shore), you will have a bigger boat, with a bigger engine, and be able to afford the gadgets inside your homes for your family. Areas predominately the domain of the women, which include the house, sanitation and healthcare, are a lower priority. It is the areas where the men spend the most time and effort where the money is spent. It is likely that if women, rather than men, controlled the money, priorities may be different.

All of this makes the question of dependence more complex. There is enough money in the community to achieve many of the very things for which aid is sought and provided. In ‘Uiha village, the community established a savings plan until there was sufficient money to build every family a new concrete block toilet, and then built them all. These toilet blocks remained standing on every destroyed house site I witnessed following Cyclone Ian. This is a good example of what is possible. However, it requires leadership and community will for success. On Druadrua, people spoke of the difficulties in maintaining community consensus on projects such as the erosion of the foreshore. There is will at the beginning, but soon those whose houses are higher on the hill and are not immediately affected by the erosion lose interest and no longer think it is a project worthy of the entire community’s time and effort.

The Chief spoke of his diminishing influence and authority in the community, where people no longer listen to or heed his advice and instructions. So there is a leadership vacuum without which community projects will not succeed. Further, in a culture where no individual will take responsibility for the purchase of a $10 bike pump for the whole community to benefit from, it seems that projects must be at community level. As more money and focus is spent on things that may be considered unnecessary, yet housing and healthcare remain vulnerable, it may be that individuals in the community are moving to higher levels on the Maslow hierarchy, jumping ahead of truly fulfilling the basic needs of safety and shelter. This may also be reflective of a disconnect between a traditional and a Western view of what constitutes having those basic needs fulfilled.

A house can be built for about FJD20,000 and bought in town for FJD50,000. If weekly earnings on the island can be FJD700-1000, new houses are well within reach at a ratio of house price to annual income of about one. Or at least more so than in many Western countries such as Australia where the ratio is above four, with some estimates closer to seven (Fox and Finlay, 2012). The house may not be up to the standard expected in those Western countries, but proportionally, there will be money leftover to make improvements to get them to a higher standard, well before having spent more than four times your annual income.

The issues of expectations of and dependence on aid are complex and bound up in experience, perceptions and culture. Just as the different parts of the disaster management cycle are interdependent, so too are the elements that impact upon that cycle. The expectations of aid are affected by the provision of aid, which is affected by the governance and co-ordination of the aid system.

11.3 Governance and co-ordination issues

After a disaster, there are accumulations of three things - people, organisations and aid. The governance and co-ordination of these will always represent a challenge of one kind or another, whether it be too much of one thing or too little of another. It also seems to be a reality now that there will be donations of aid in the form of goods and cash from a variety of sources, both formal and informal, and that those donations will make their way towards the affected communities through a variety of routes, again both formal and informal. This movement of aid will be bi-directional in that there will be approaches made from both the providers and the affected communities. Extended families will contact and provide help to one another. Aid agencies and civil society organisations will receive donations and distribute them amongst the affected communities.

Governments will be responsible for the provision of aid and ensuring the security and well-being of their citizens. Their task will be to oversee and attempt to co-ordinate all the efforts that are simultaneously occurring. Realistically, they will not be able to. In the increasingly connected world we live in, with websites instructing people on how to rapidly establish informal volunteer relief organisations following a disaster, no single central co-ordinating body is going to be able to manage all the information. Much of what is happening will never reach the knowledge of the co-ordinating body, and there will be too much to organise and make sense of in a timely way. Families are very unlikely to routinely inform government of what they are providing and when to their affected members, and nor should they have to. Their role during the aftermath of a disaster is to help make sure their family members are safe, not to navigate bureaucracies. So, a starting point should perhaps be that information management is vital with as much information as can be usefully gathered, but it will never be a complete picture. However, lacking all the information does not negate the government's responsibility to its citizens. This is a difficult position indeed.

The government's efforts must be to ensure everyone affected has their basic needs fulfilled - that is, Maslow's first two levels of need - physiological and safety. That will be a challenging enough task to tackle with efficiency, timeliness and equity, given the limited resources including human resources available in these countries. Whether individuals, particular families or communities are being elevated on the Maslow scale through aid from other sources outside the Government's control is exactly that - outside the Government's control. Issues of endemic corruption and favouritism within the formal system are, or should be, within their control however, and are central to fulfilling their responsibilities.

If Governments were able to remove all traces of corruption, favouritism, and inefficiencies and fulfil the basic needs of the affected communities in an effective, timely and equitable manner, the whole system would be simpler. Many of the actors who deliberately operate outside the formal system would either not exist, or would be more likely to link in, because their stated reasons for their modus operandi (corruption, favouritism and inefficiencies) are the very things that would no longer be problematic. In a vicious cycle though, the informal system highlights and exacerbates the perceptions of inequality and delays in the formal system by circumventing the very processes that make the formal system formal. Conducting assessments, allocating resources across the entire affected area and co-ordinating multiple players and systems are the reasons why the formal system is both formal on the one hand, and slow and bureaucratic on the other. Smaller, independent agencies and individuals operating informally do not have to follow any of these rules or systems, and are not accountable for their actions.

With disaster events predicted to become more frequent and severe, these issues are not going to disappear. Rather, they are likely to continue as the informal side of the system increases and in some instances tries to formalise itself, leading to multiple systems operating simultaneously yet separately. Indeed some in Fiji perceive this to be already happening. The governance and co-ordination of disaster response is going to have to adapt. If this reality is accepted and embraced, it may be transformed from a problem into an opportunity.

Being able to take advantage of opportunities is adaptive capacity at work. What seems like a nightmare for the government as far as co-ordination and control is concerned with a lack of integration of the formal and informal systems, may in fact represent important elements of adaptive governance and resilience (Biermann et al., 2010). The multiple levels and players within the system provide the flexibility required of a resilient system (Ostrom and Janssen, 2004). Should the role of responsible and accountable provider be separated from co-ordinator? How can the extra resources of the informal system, both financial and personnel be harnessed effectively to work alongside rather than in competition with the formal system? If the competition can be transformed into collaboration and learning, effective adaptive governance may be achieved (Wyborn and Dovers, 2014). These issues will be important into the future, as will considerations of the differences in experience of response for remote communities.

There was an intention in this project to focus on the response and recovery side of the disaster management cycle, with enough consideration given to the prevention and resilience side just to be able to make sense of the response and recovery issues. However, it quickly became clear that the issues are so intertwined that separating them is somewhat artificial. The ways in which prevention and resilience are addressed or not, directly influences the impact of an event becoming a disaster. This in turn, directly impacts the response and recovery actions required. Completing the loop, the ways in which the response and recovery issues are addressed adequately or not, directly impacts upon the prevention and resilience into the future. The immediate humanitarian response may be able to be extracted from this vicious cycle, since it is short term and targeted. In reality though, the experiences of humanitarian response influence perceptions and expectations from all involved, which influences preparation in future. The realisation of just how interconnected and interdependent the elements of disaster management are means that there is a greater emphasis on the prevention and resilience aspects than intended in the research questions.

There is an interesting irony here. One of the biggest issues in the actual disaster response, especially in Fiji in this project, is the impact of the newer or non-traditional aid organisations operating outside the formal system. The firm connections between the different elements of the disaster management system are some of the reasons why the short-term strategies of these players do not fit neatly into that system. The longer-term view linking the response with prevention and resilience requires a professionalism and dedication that is unlikely to be immediately apparent in 'pop-up' aid organisations, since aid is not their core business. Notwithstanding, they also represent some of the reasons why the informal system exists. Alongside trying to overcome perceived corruption and inequalities, the newer organisations are specifically trying to overcome the perceived delays in the formal system - delays in part caused by a longer-term view and linkages beyond the immediate humanitarian aid.

There is no evidence that the informal system is going to slow down or cease. Rather it is likely to increase, as communication, travel and technology increase the opportunities for it. The challenge for the government is in allowing and embracing that expansion and service provision, while ensuring the needs of all affected citizens are met after a disaster, and that equity is maximised in the process. The various agencies and organisations have different roles and functions within the overall system. There is some recognition of this and the opportunities it may provide in the draft Strategy for Disaster and Climate Resilient Development in the Pacific (SRDP) that advocates for the increased use of faith-based organisations' prevention and preparation efforts. It seems unlikely that remote places will ever be part of the response element of the informal system in the way in which the urban and easy-to-reach places are. For the remote islanders, the informal system will continue to consist primarily and sometimes only of their extended family elsewhere. This is something that the government already relies upon to a certain extent - with clear expectations that people will turn to family first in times of disaster.

11.4 Issues of remoteness

The dominant feature of remoteness for the islanders in this study was the water separating them from the main islands. The concept of coping with a natural disaster takes on a new meaning on a remote island, within a remote country, and requires a shift in thinking for the observer used to referring to mainlands. The remote island community must fend for itself for up to three weeks after an extreme weather event such as a cyclone, before outside help arrives. When it does, there is likely to be the government, and the Red Cross only. The proliferation of aid organisations and competitive humanitarianism seen elsewhere (Stirrat, 2006) is irrelevant.

While the wait for aid is definitely perceived as a problem, the inequities and inconsistencies, and power relationships in the system, and the resulting unease and jealousy within the community were of equal concern. The community expressed high expectations of aid, and some within the community consider that there is dependence on aid exhibited. High expectations of aid are not necessarily the same thing as dependency on aid, as highlighted by the notion of food aid representing time. Dependency suggests a lack of alternatives, which is different to hoping for and accepting aid, and incorporating it into existing recovery strategies. It may be beneficial to more specifically differentiate between for example food aid and housing aid in examinations of dependency, since there are separate issues for each. However, focusing the discussion on a climate changed future quickly dissolved any notions of dependency, with expectations that aid would diminish, and the community would have to return to self-reliance. Many community members recognised changes in their environment and climate and were pessimistic about their future.

The type of remoteness experienced on the two islands in this study differed. In Fiji, the island of Druadrua is remote within the northern region of the country. There are delays in getting supplies and aid from the island on which the regional centre is based, and clear experiential differences between the two islands, separated by just a small stretch of water. To a certain extent, the whole of the northern region of Fiji is remote in the disaster context in that

there are so many of the newer aid organisations operating on the main island where the capital and tourism centres are located only. However, there are a number of aid organisations with bases in the northern region, and the real separation was between the individual island of Druadrua and its near regional centre neighbour. In Tonga, it is the entire Ha'apai region in which the island is located that is remote within the nation. The stretch of water between it and the regional centre was geographically far greater than in Fiji, but appeared to be of less consequence. In Tonga, it was the region itself that is remote, with delays in getting supplies and aid to the entire region. There was also much more of a regional identity in Tonga, compared to in Fiji where the island identify was very strong, which perhaps reflects this differing concept of remoteness.

Remoteness can be considered either a positive or a negative. It was a negative for these communities in terms of increased waiting times for assistance after an event, less assistance (especially in Fiji), and feelings of powerlessness. However, it was also a positive for the communities in ways they were probably not fully aware of. The sense of community and resilience among the people was tangible. The government perceives them to be dependent on aid, but they help each other out and get on with surviving during the wait for this aid. Traditional knowledge was clearly evident, and the consistency between the two countries in the details of this knowledge was remarkable.

The experience of there being two different worlds: the remote and the non-remote, in these countries was striking. There were contradictions and inconsistencies in the experiences that are difficult to reconcile. On the remote islands, when your income is disrupted for an extended period of time after a cyclone, you need to rely on subsistence fishing and farming to survive - which on these islands you can do. In non-remote places, when your income is disrupted for an extended period of time after a cyclone, you are much less likely to have a subsistence lifestyle of fall back on. When there is no food after a cyclone, in remote places you have to wait for the next crop to be harvested, and eat what you can catch from the sea and salvage from your plantation in the meantime. When there is no food after a cyclone in non-

remote places, you can go to an evacuation centre and be fed (in Fiji at least), and use money in your bank account and from your job to purchase food from the shops. There appear to be advantages and disadvantages to living in both places, but of different types.

One of the other issues for remoteness is the invisibility of being isolated: isolated from scrutiny, from responsibility and from accountability, which can work both ways, as a positive or a negative. It may mean isolation from the constraints of bureaucracy, and a freedom for innovation and social capital in the form of networks and collective action to work. Perhaps an example of this is the story of the villagers from Salevukoso rescuing those in Delaivandra during the eye of Cyclone Ami in 2003. It is likely that the remoteness and isolation moved the villagers from thinking *I hope they are alright and that someone helps them* to *we have to help them because there is no one else*.

There are also clear negatives to remoteness. The lack of available options manifests itself in various ways. It seems likely that the position of *turaga ni koro*/Town Officer is in reality more a matter of taking turns than democratic elections with a limited pool of apparent contenders. The combination of this and there being no one to complain to about your *turaga ni koro*/Town Officer's behaviour and decisions is a powerful one indeed. The potential is laid in the formal systems for corruption and inequalities to go unchecked. There may be scope for the informal system to take over or be an alternative, or for the Chief or Noble to intervene. However, there are also impediments to this. Firstly, there are no Nobles in government villages in Tonga. Although these are in the minority, they represent a gap in the systems. Secondly, even where there is a Chief or Noble in the village, it is not assured that this person will command the respect of the entire community.

The traditional leaders are losing their influence in some places, especially with the younger generations, and as money and making an income begin to dominate and change the culture. The nexus between the traditional Chief and the *turaga ni koro* in Fiji was explained to me as that the Chief makes the decisions and the *turaga ni koro* enacts those decisions. This would appear to give the Chief the power in the relationship, and therefore the position with the potential to control corruption and inequalities. It does not always seem to

work that way in practice however, and the official recognition given to the *turaga ni koro* by the government in the formal system complicates matters significantly. As community members noted, this systems works well when there is the right person in the position, otherwise it has the potential to cause great concern, when, for example, that person is not pro-active enough.

What does the remoteness issue mean for adaptive capacity? Suggestions from some community members in Fiji of having a village committee responsible for disaster management, and perhaps meetings before an event strikes, to discuss what needs to be done, are supported in research literature from over 10 years ago (Barnett, 2001), and in recent national disaster management plans in Tonga (MECC and NEMO Tonga, 2010). But in the small island community interviewed in Fiji, such ideas remained just that, and with concern that the power and privileged position of the *turaga ni koro* would add complexity to any attempts to turn those ideas into meaningful action. In Tonga, the committees were established, but with varied success.

The village disaster committee structure should improve adaptive capacity, because it will increase the scrutiny and transparency of responses, while embracing and utilising the social capital that exists on these remote islands. However, as the evidence from Tonga shows, it will depend on whether or not the committees are active, and who their members are. Without constant external support for the committees, they are unlikely to flourish, which has been recognised by the organisations establishing them. It is likely that in those communities where the informal and formal systems interact successfully, the village disaster committees are likely to fit well and be supported by the existing systems. It is likely to be in those communities that need a fully functioning village disaster committee the most, where those committees are least likely to flourish without the external support. Where the village Chiefs or Nobles are either absent or have little influence, and the *turaga ni koro*/Town Officer is not respected within the community, vulnerability is high and the need for a village disaster committee would be both the greatest and also the least likely to succeed. Where there is limited ongoing external support available, it should be concentrated on these most vulnerable communities.

The issue of the extended wait for humanitarian aid in remote places is difficult. Aid must be prioritised according to need, but in reality those who are closer to the population centres, and live in areas of greater population density will usually receive aid before those in sparsely populated, difficult to access places. This situation may well be rational in terms of helping the most people in the shortest time, and be one that must be accepted. Minimised and kept in mind to ensure that need does not become a secondary consideration, but in the end, accepted as reality. However, when the issue is prevention and adaptation, the situation is entirely different. Without the urgency attached to humanitarian aid, the criteria for prioritising spending allocations and funding recipients changes.

There are a number of reasons why remote places should have priority. Firstly, given the reduced access to services and humanitarian aid in times of crisis, there is an equity issue meaning 'it is their turn'. Also, the pre-existing vulnerabilities are higher on the remote islands where infrastructure is weaker and building codes are not enforced. Secondly, it may be beneficial for governments, funders and civil society organisations to prioritise remote areas. Where preventative and adaptive work is essentially experimental, it makes sense to do those experiments on a small scale. Remote communities allow for this. This would also provide the opportunity to do multiple projects simultaneously in the smaller, remote places, thereby speeding up the process of testing and refining the measures.

Tonga is currently testing out adaptation options for sea level rise, under the Joint National Action Plan on Climate Change Adaptation and Disaster Risk Management (JNAP). But they are doing so on the main island, and telling the smaller, remote islands to wait until the results are in. One of the reasons for starting on the main island is because part of the JNAP involved risk mapping for sea level rise, which has resulted in detailed maps of which communities are likely to be impacted when as the sea level rise increases. This information provides good evidence for prioritisation of some communities over others.

However, the mapping was only funded for the main island, Tongatapu, and Lifuka, the main island in Ha'apai. The risk and prioritisation of the smaller islands remains unknown, and there is no funding currently allocated to fill this gap. The flooding of areas on the main island is known and acted upon, because that is where the information is available and where there are civil society organisations operating to discover it. That is not the same as those areas being at greater risk than other islands and areas that have not been similarly surveyed.

In discussions around trying to shift the funding focus from response to prevention, the issues particular to the remote islands needs to be taken into account. If the starting position is always based on the main islands, and a view is formed that some of the response funding could actually be moved to prevention, as opposed to new prevention funding being found, the remote islanders may be placed at extra risk. While individual cases certainly do exist of a few people on remote islands receiving more than they needed, overall the aid to the remote islands is not representative of duplication and waste. The waits are long, and the aid organisations few. It is easy to lose sight of this reality when faced with the co-ordination and governance issues in Fiji particularly, however, the risk remains. It is possible to envisage a scenario for example, whereby a government decides to focus its internal funding on prevention rather than response, with only the outer islands maintaining their government based aid response receipt. In the ensuing arguments as to the definition of an 'outer island', some communities may be at risk of missing out.

Some of the thinking around such future decisions may be gleaned from the regional and national frameworks and strategies, and progress towards their implementation is discussed in the next section.

11.5 'Development' and 'progress'

There are two important adaptation options outlined in Tonga's JNAP that are directly relevant to this study. The first is the development of community preparedness plans. Theoretically, progress is being made on this option through the establishment of the village disaster committees, which are then in turn, responsible for the village plans. However, as the results of this study show, not all the village disaster committees are active. An important area of future research would be in identifying the extent to which each village disaster committee in the country is active, and the factors relating to the success of those committees.

The second adaptation option is relocation to higher ground. Less progress is being made on this option, since there had at the time of fieldwork, been no serious discussions within government about how to put it into practice. Further, there was no timetable for when such discussions may occur. Communities are left with piecemeal assistance in finding new or alternative locations to live, but no financial assistance to re-build. This was nominated by several people (in both countries) as being the most significant impediment to taking up this adaptation option. It is likely that the financial considerations represent the greatest difficulty for government in implementing this option, and that knowing this, there is little incentive to open debate on the issue. However, the need for relocation is now for some families, and imminent for many others. It seems likely that unless proactive, prevention-based funding for such projects can be found, there will be crisis points that will generate reactionary responses.

Fiji has been able to relocate several entire communities, some at the initiative of government, and some at the initiative of the community itself. It is not immediately clear where the funding for these projects has been sourced, and it may simply be reflective of the better availability of resources in the larger country of Fiji than in Tonga. For the people facing the rising water though, such distinctions are meaningless. They simply need help to move somewhere safer.

The draft Strategy for Disaster and Climate Resilient Development in the Pacific (SDRP) recognises many of the issues identified in this study around the way disaster aid is proportioned, distributed and used. The need to move from the current focus on response towards risk management, the need for improved co-ordination, and the need to make compelling economic cases for proactive strategies, are all supported directly by the results of this study. What is less clear is whether these messages will filter through to those making funding decisions. In countries as dependent on foreign aid as Fiji and Tonga, strategies and declarations of intent at a national and regional level will be ineffective unless funded. The move from top-down to bottom-up approaches should extend from the national to international level. Much foreign aid is beginning to do this, with recipient-initiated and directed projects becoming more common. However, where that is still within an overall framework set by the donors, the point may be lost.

Equally, the decisions made by the governments in countries such as Fiji and Tonga must, both during and outside disaster times, align with the regional frameworks. They should be prepared to insist upon the long-term, preventive vision. This may be difficult to achieve for the dependent aid recipient, with pressure from the communities to act.

Development and progress in Fiji and Tonga have been both helpful and a hindrance, in a number of realms including housing, food production and traditional knowledge. The shift away from traditional housing materials and construction has had opposing impacts. The modern, western style houses enable rainwater harvesting for drinking water from the corrugated iron roofs. This is an undeniable benefit over thatched roofs from which the water quality is usually poor. The modern houses are generally considered to be stronger than traditional *bures* or *fales*, although this is far from a universal opinion, especially among elders in this study. Part of the problem here may be that modern houses have the potential to be a stronger, better option, but that does not automatically translate into actuality. Poorly constructed modern houses will fail in cyclonic winds, and flying tin roofs have introduced a risk that did not exist in the past. The disaster relief houses in Fiji are designed to be a starting point, for communities to complete, with the additions strengthening

the houses. The problem is that many community members do not understand exactly what is required or expected of them, or how to achieve it. So the partially completed houses remain just that.

In Tonga, there is the additional impediment of the unavailability of hardware in the entire Ha'apai region. Knowledge and will to build the strongest possible house are somewhat hampered when there is nowhere to buy nails. Yes, they are available from Tongatapu, for those willing and able to order them and wait for their arrival on the ferry. The current situation does not promote self-sufficiency and preparedness. Simple and yet extremely effective elements such as cyclone ties holding down roofs are rarely seen, although notable in some of the houses that survived the recent cyclone, Ian.

The newer houses then represent poorly implemented potential, and an example of the failings of top-down policies. These houses have been put into the communities, particularly as disaster relief houses, without the construction and maintenance knowledge also being implemented adequately. As time passes, knowledge of the traditional building techniques is being lost with fewer of them around and being constructed, leaving many caught in the middle. Similarly, the move from subsistence farming to commercial farming and fishing has seen a reduction in the variety of crops planted. Having cyclone resistant crops growing during the cyclone season requires thought and planning throughout the entire year, and where this is not done, families are left at increased instead of decreased vulnerability.

Ironically, it is the same traditional knowledge and coping strategies that have been diminished in recent years by the imposition of Western ideas of development and progress that are required and called for in the most recent version of that development and progress - preparation and resilience:

> The main aim of disaster management should be focused on preparedness. In some senses, this implies a return to the development of local coping strategies to make communities more resilient in the face of change, as a resilient community is better able to cope with change and adjust to new realities (O'Brien et al., 2010, p.503).

A return to the local coping strategies as a way of increasing resilience should be purposeful and thought through, learning from the past. Remote island communities are places where the remnants of those local coping strategies are to be found.

11.6 Alignment of perspectives

There were two foci to the majority of interviewees' suggestions for adapting the system to cope with climate change - preparedness and prevention, and governance and co-ordination. An increased focus on preparedness and prevention was almost universally agreed upon as a priority by all stakeholders. This was the single biggest point of agreement in the perspectives of the three participant groups. The second focus, on governance and co-ordination issues, was equally prominent, but without the alignment of perspectives.

Communities in both countries, as well as many aid organisations, thought that bypassing the government on the distribution of aid would improve timeliness and equity. The government is widely seen, in both countries, as being the source of delays, corruption and favouritism, resulting in inequities. In direct opposition to this perspective however, is that of the governments, that would like more rather than less, central control of the aid response, because they have ultimate responsibility for ensuring aid is delivered to all affected communities and achieving this is more difficult without all the information regarding who is doing what and where. The aid organisations, while recognising the resulting duplication and waste of resources, seem less concerned by this than the governments. Perhaps that is a reflection of the only solution currently offered being increased central control by the government.

The regional governments would like more control and authority in the process than currently exist either in practice in the case of Fiji, and also in policy in the case of Tonga. This may be a step towards a solution because while they are still government, at the regional level they are better connected with the local organisations involved in the aid response. This may assist with some of the co-ordination issues, and not having to wait for clearance from the national office may assist with the timeliness issues. This is particularly

relevant in Tonga where for example, the standard process is for all surveys and damage assessments to be conducted by government officers from Tongatapu, regardless of the location of the disaster, and capacity of the local office.

11.7 Conclusion

Disaster responses need to change to adapt to a changing climate because the current system focuses too much on the humanitarian response and not enough on prevention and climate change adaptation. With increases in frequency and severity of a variety of disasters likely and already being seen in some places, preventing the hazards from becoming disasters is essential. Adaptive capacity includes the ability to a) adjust to potential damage, b) take advantage of opportunities and c) respond to consequences. In the context of this study, tropical cyclones are likely to mean for remote islands: a) potential increased damage from increased severity of windspeeds and high storm surges; b) opportunities presented by cyclones being fewer overall in number, and c) respond to the consequences of fewer but stronger cyclones, such that there may be more time between cyclones impacting on individual communities, but when those hazards do impact they are likely to be at increased risk. Sea level rise, however, adds another element to the potential damages with flooding and inundation likely to become more frequent even at lower windspeeds.

The adaptive capacity of the system is constrained by the existing incentives being skewed towards short-term, quick fix, high profile responses rather than the more 'silent' preventative work. While there is will among many of the key stakeholders to shift towards prevention and community awareness programs are conducted, funding for prevention and adaptation projects remains much more difficult and complex to access than humanitarian funding, with many more organisations involved in response rather than longer term, forward thinking work.

There are many issues involved in the adaptive capacity of disaster response in Fiji and Tonga. Donor-reliant aid organisations and governments are restricted in their ability to dictate priorities. Alternative incentives and processes for the donors need to be found and the German/Ugandan Red Cross pilot project and the World Bank response to Cyclone Ian may be good examples of this.

The importance of community level approaches with good local leadership is clear from this study. The complexities of the integration between the traditional and governmental systems increase the difficulties of this task, particularly in Fiji. However, initiatives such as the village disaster committees can work and address many of the issues the communities themselves had.

The move towards prevention and preparedness, which places more responsibility back onto the communities themselves calls for some of the traditional coping strategies that have been eroded in recent times. It is in the remote islands and communities that this knowledge is likely be found, because they are the communities most likely to have to exhibit such resilience now. If your island is one of the most severely impacted by a devastating disaster such as 2014's Cyclone Ian in Tonga, then help will probably arrive within about one week. But if you are on the periphery of the high impact zone, the wait is likely to be much longer - certainly far longer than anyone in a western urban setting would consider tolerable. It may be essential then, to look to these remote communities as a starting point, rather than an almost forgotten add-on to the process.

Chapter 12 - Conclusions

This last chapter presents a summary of the research, some conclusions from it, and notes its contribution to the field. There are reflections on how the aid system might undergo transformational adaptation. Finally, the chapter notes the lasting impressions the research experience has left me with, and looks to future research.

12.1 Outcomes from the research

Small island developing states are at the forefront of climate change impacts. There, debates about what might and might not happen in the future are less relevant because it is happening right now. Disasters are already increasing in severity and frequency and these small and remote islands are dealing with them as best they can. Aid responses to disasters bring with them funding and opportunities. The choice is to either ensure they are effective and forward-thinking, or simply rely on existing systems matching the increased severity of nature's hazards.

This research aimed to investigate how disaster responses need to and are able to adapt to a changing climate, with reference to remote islands in Fiji and Tonga. With climate change altering the frequency and severity of hazards, the responses of communities, aid organisations and governments will need to adapt accordingly. Research on disaster response is a well-established field and includes work on the integration of the climate change adaptation and disaster risk management areas. However, while some previous work exists, research in this arena, which includes a focus on remote islands is not common, and rarer still if it includes the voices of the remote island communities.

Much of the existing research that includes remote island communities centres around either disaster response or climate change adaptation. Policy is bringing them together, but this is not well reflected in the research. Herein lies a strength of this thesis. The fieldwork on remote islands in Fiji and Tonga provided an opportunity for the perspectives of those communities to be heard on the important issue of climate change adaptation and disaster response.

These perspectives were then contrasted with those of organisations involved in disaster aid and climate change adaptation and the governments. This revealed completely different worlds, with the perspectives of the remote island communities having more in common with each other than with those of the aid organisations and governments in their own countries.

The communities live with cyclones and accept them as part of life on their islands. They showed a depth of traditional knowledge of natural warning signs, and resilience with waits for post-disaster aid that are more realistically counted in weeks than days. Evacuation centre options are few, with the communities relying on the strongest buildings in their respective villages. These buildings are a safe haven during the event, but are not serviced with supplies in the way the main island evacuation centres are.

There are diversity issues, with different roles and experiences for different parts of the community. For most people in the communities, gender roles remain clearly defined during and after a disaster, changing little from before the event. This sees women with responsibility for cleaning up and restoring order in the home, finding food and preparing meals, and caring for children and the elderly. Men are primarily responsible for providing shelter and repairing homes. There seems to be little flexibility built into these roles for operating outside of normal circumstances, which may be limiting from a resilience perspective. Faith plays a very important role as a source of strength and meaning, as well as aid, especially in Tonga where the Mormon Church is very active and well resourced. In Tonga, the churches are so integrated into aid provision, that which church you belong to will impact on your living conditions and socio-economic status. Hence, your adaptive capacity and resilience are linked to your church membership, as much as to other forms of aid.

There are a number of important findings relating to the provision of aid. Aid is both expected and provided, but very much dependent on location, with main islands seeing multiple sources of aid delivered within days from some aid organisations, while remote islands will be likely to see the Red Cross and government only. Changes in policy and dependence of governments on donor funding for aid hampers expectations and leaves many on the islands

pessimistic about aid availability in the future. All participant groups noted corruption and favouritism in the provision of aid, although there are different levels acknowledged and causes attributed to it. The result is real and perceived inequalities, sometimes resulting in disharmony within the communities. Aid is not necessarily directed towards addressing need, with availability and donations sometimes dictating what the aid consists of. This may involve jumping ahead on the hierarchy of needs to addressing higher-order needs without lower-order needs being fulfilled first.

The increases in aid, and especially receipt of aid from multiple sources on the main islands, increase both actual and perceived expectations of receiving aid next time. This decreases motivations for preparedness and prevention, with some viewing disaster aid as a way of getting ahead in life by obtaining otherwise unreachable goods. This is seen to a certain extent on the remote islands, but not to a level that matches the perceptions of aid organisations and governments. The expectations are also borne of experience such that expecting to receive aid may not be a sign of dependence upon it, so much as a reflection of past experiences. That is different to not being able to cope without it, and those on the remote islands who were pessimistic about future aid availability said they would simply get on with it and look after themselves. That future availability of aid and the provision of it, especially to remote islands, relies in part on the management of expectations and the aid system itself.

Governance of the system is difficult, especially in Fiji where there are multiple organisations involved in disaster response operating outside the formal system. Often, they are involved specifically to operate outside a system perceived to be slow and inequitable, or even corrupt. This means the task of co-ordination, information management and addressing need, which is the primary responsibility of the government, is more difficult as they are without all the information about what is going on where and when. This in turn exacerbates the inefficiencies and ineffectiveness. In both countries, the difference between the policy and operating environments is stark, with most of the main stakeholders understanding what happens in practice, but few others achieving such clarity. In Tonga, traditional decision-making sometimes

overrides operating procedures, leading to confusion and delays, especially for remote islands left waiting for the bureaucracy.

The remoteness of these islands is both positive and negative for the communities. The waits for aid and assistance are long, and fewer resources are directed towards them, and from fewer sources. The communities feel they are left until last (and in reality they often are), or left out completely. They operate with little scrutiny and transparency, and this does not always work well for everyone. However, on the positive side, there is remarkable resilience and social capital that are commonly seen in remote communities. These are elements to be embraced and learned from.

The findings in this thesis both support and depart from previous research done in this area. One study on a remote island in Fiji after a cyclone in 1975 revealed findings almost identical to this research in many respects. Most people thought leftover food should last two or three weeks; the community reported food aid being late, inconsistent, with evidence of theft before it arrived, and reported favouritism from the distributors; traditional warning signs were used but sometimes ignored; and the government was advocating a policy of self-help (McLean et al., 1977). Each of these findings translates directly into this thesis looking at events 30-40 years later. One area of divergence was that in the study from the 1975 cyclone, the communities suggested that every village should have a government built cyclone shelter stocked with food, water, building materials and tools. In the current study, while communities still thought every village should have a shelter or evacuation centre, responsibility for building it had moved to within the community. This seems to represent a decreased rather than increased sense of dependence and entitlement. Whether this change in expectations is because there is an increased sense of self-reliance and resilience or a sense of having given up on government assistance is not clear.

Attitudes towards migration as a climate change adaptation option were very similar in this thesis to a study done in the remote, outer islands of the Solomon Islands, where barriers to migration are similar to Fiji and Tonga, including land tenure issues, housing and employment concerns (Birk and Rasmussen, 2014). Communities in these outer islands identified long-term

climate change issues of concern, but did not readily cite them as being linked with decisions to migrate and were resistant to forced migration. These findings are all similar to this thesis. However, in Fiji and Tonga, some people were either actively seeking, or at least willing to accept assistance to migrate for environmental reasons.

Previous research in Fiji has found conflicting reports from regional and local level government and *turaga ni koros* regarding the processes both pre- and post-disasters in terms of early warning disseminations and damage assessments (Becker, 2012), and government mistrust of community led damage assessments (Méheux et al., 2010). These elements were prominent in this thesis also, with confusion over processes, and communities both aware of and perturbed by government mistrust of their involvement in damage assessments, questioning the point of putting much effort into assessments that would all be re-done by government assessors anyway.

Earlier research in Tonga found that climate change was not being taken seriously, with people generally considering Tonga to be at lower risk than other countries in the region, and religious fatalism representing a major impediment to climate change action (Nunn and Wadell, 1992). This thesis demonstrates progress since that time, with generally good awareness of climate change issues, and the country being a leader in the region in terms of climate change policy. Religious fatalistic attitudes - that God's will determines everything - is still clearly evident, but so are efforts and mechanisms for harnessing the faith to work towards adaptation, using the notion of stewardship of the earth and the need to protect it.

This thesis also makes a contribution in its analysis of the methodological issues with doing cross-cultural research, and the presence of the researcher's family in fieldwork. These are very practical issues that are given little attention in peer-reviewed journals. The discussion of *talanoa* research and the challenges involved for a foreigner to put this into practice is important. For culturally appropriate research in this region to continue to develop, further discussions and analysis of *talanoa* research, from both those within the culture and outsiders trying to understand, would be beneficial. There are few discussions in the existing literature of the implications of having the

researcher's family in the field, yet as shown in this thesis, it impacts on every stage of fieldwork. It is as important a consideration as note taking and information recording techniques, since in so many ways it shapes the information available to be recorded. Reflecting back to role theory, the notion of having multiple identities in the field is complex and was directly relevant here (Katz and Kahn, 1978). My identities were highly gendered in some respects in these cultures of gender specific roles, but less so in others. I was a researcher, but also a woman (sitting at the correct end of the table), a mother (at school), a wife (doing the washing). The multiple identities and roles played by the researcher in the fieldwork are an integral part of *talanoa* research.

Finally, there are contributions to the field from the conceptual framework and the policy implications of the issues around future funding. The inclusion of expectations and remoteness in the conceptual framework is a departure from much of the previous work in this field, and represents an innovation in this research. These issues have been shown in this thesis to be important and relevant to prevention and preparation, as is governance. The framework used here may well be applicable to other remote places. As the sector struggles with how to implement the integration of the adaptation and disaster response arenas, this thesis provides practical and policy suggestions.

12.2 Changes for the future

The findings of this thesis have direct application in relation to planning for hazards and disasters. This section illustrates this by considering the situation as it stands and potential for the future. In the tables below, the main themes of disaster aid and relief, expectations, issues of remoteness and governance are divided according to the interview groups - community, government and aid organisations. The first table represents how the disaster response systems operate currently in Fiji and Tonga, and the second suggests how they should operate into a climate changed future.

Table 12.1: How it is now – intentions/motivations vs outcomes/consequences

	Community	Government	Aid organisations
Aid and disaster relief	*Intentions/motivations*: Aid to fulfil needs; aid to acknowledge suffering; aid to ease time pressures *Outcomes/consequences*: Inequitable distribution and allocation; aid may not meed needs; inconsistent (especially Tonga)	*Intentions/motivations*: budget constraints; opportunity for easy funding; political gain; responsibility for welfare of citizens *Outcomes/consequences*: Difficult to coordinate; viewed as being corrupt and slow	*Intentions/motivations*: some appear only at times of disaster; independence from government; business; see themselves as faster and more legitimate alternative to government; various motivations including public relations and fund raising value *Outcomes/consequences*: focus on short term goals to the neglect of future prevention (and climate change adaptation); Inequitable distribution and allocation; aid may not meed needs
Expectations	*Intentions/motivations*: high expectations of aid; uncertain expectations arising from past inconsistencies; low expectations of governance of aid *Outcomes/consequences*: dependence on aid to the detriment of preparation and resilience; self reliance in face of pessimism about the future	*Intentions/motivations*: perceive high expectations from community; perceive high levels of dependency from community; high expectations of community self-reliance *Outcomes/consequences*: dependent itself on donor funding (especially Tonga)	*Intentions/motivations*: perceive high expectations from community; perceive high levels of dependency from community; independence from government *Outcomes/consequences*: increase expectations and dependency especially with inappropriate aid (type or amount) (especially Fiji);
Remoteness	*Intentions/motivations:* low expectations of governance of aid; isolation *Outcomes/consequences*: long wait for aid; powerlessness; increased self reliance; better upkeep of traditional knowledge; more and faster aid for main islands (especially Fiji); lack of external oversight; independence	*Intentions/motivations*: remote areas able to be forgotten or receive less attention; high expectations of community self-reliance *Outcomes/consequences*: different policies on aid provision (especially Fiji)	*Intentions/motivations*: cost of provision to remote areas seen as prohibitive; various motivations including public relations value; remote areas seen as responsibility of government *Outcomes/consequences*: remote areas often neglected; some provide aid only to easy to reach places (especially Fiji); more and faster aid for main islands (especially Fiji)
Governance	*Intentions/motivations*: Aid to fulfil needs; aid to acknowledge suffering; aid to ease time pressures; low expectations of governance of aid; isolation *Outcomes/consequences*: Inequitable distribution and allocation; aid may not meet needs; inconsistent (especially Tonga); more and faster aid for main islands (especially Fiji); lack of external oversight; independence	*Intentions/motivations*: responsibility for welfare of citizens; co-ordination and control over aid system *Outcomes/consequences*: Difficult to coordinate; viewed as being corrupt and slow; Inequitable distribution and allocation; inconsistent (especially Tonga); more and faster aid for main islands (especially Fiji)	*Intentions/motivations*: independence from government; business; see themselves as faster and more legitimate alternative to government *Outcomes/consequences*: focus on short term goals to the neglect of future prevention (and climate change adaptation); Inequitable distribution and allocation; operate outside official aid system; aid duplication and waste

Many of the issues and problems in Table 12.1 seem to arise from the apparently easy availability of disaster relief funding compared with the more structured and controlled funding for prevention or adaptation projects. The over-abundance of aid organisations and aid is more relevant for Fiji than Tonga, but the problems associated with the difference between the two types of funding are equally applicable in both countries. This results in continual repairs and patches being made without addressing the underlying vulnerabilities.

The policy focus on prevention and adaptation, which requires a longer-term view, will need to translate into more actual funding. This will require funding provision of this type to be made more attractive to donors, which ultimately means politicians. Donor funding is easier to hand out when there is an obvious and unequivocal need. Humanitarian disaster relief fits neatly into this category. It may be argued living with the water lapping at your home every high tide represents an urgent need also. But a home with waves gently breaking onto the foundations just does not have the immediacy and same level of television appeal as a waves crashing over the entire house, smashing it to pieces.

Table 12.2: Suggested changes for the future – intentions/motivations vs outcomes/consequences

	Community	Government	Aid organisations
Aid and disaster relief	*Intentions/motivations*: Aid to fulfil needs; aid to acknowledge suffering; aid to ease time pressures *Outcomes/consequences*: Aid meets needs; equitable within and between communities; timely; consistent	*Intentions/motivations*: responsibility for welfare of citizens; co-ordination rather than control of aid; long term goals for aid rather than 'return to normal'; increased resilience in system. *Outcomes/consequences*: co-ordination of aid whether directly or indirectly; timely provision; climate adaptation and disaster prevention funding and projects prioritised; decreased perceptions of corruption and inequalities	*Intentions/motivations*: long term goals of aid rather than 'return to normal'; appropriate aid based on meeting needs of the community *Outcomes/consequences*: equitable between communities; links with central coordinating body; climate adaptation and disaster prevention funding and projects prioritised
Expectations	*Intentions/motivations:* Expectations for aid which will meet needs; prevention and preparation prioritised *Outcomes/consequences*: Resilience and self-sufficiency through preparation and risk reduction	*Intentions/motivations*: increased focus of expectations on preparation and prevention *Outcomes/consequences*: decreased expectations of relief within the community through consistent and equitable aid allocation and distribution; decreased dependency on donor funding for aid relief through increased funding for prevention measures	*Intentions/motivations*: Independence from government but consider themselves part of overall aid system rather than separate from it; long term goals of aid; *Outcomes/consequences*: increased funding focus on prevention and risk reduction, and climate change adaptation
Remoteness	*Intentions/motivations*: remoteness viewed as a strength *Outcomes/consequences*: resilience and traditional knowledge valued and sustained; increased sense of power and control over post-disaster recovery	*Intentions/motivations*: responsibility for welfare of citizens; decreased inequalities between remote and non-remote places *Outcomes/consequences*: remote places prioritised according to need including outside disaster time rather than population being the main driver of priority setting; remote places given earlier opportunities, better co-ordination of aid	*Intentions/motivations*: remoteness a logistical issue for consideration rather than obstacle to provision; remote places not viewed as just the domain of government, but of aid providers in general; smaller, remote places as an opportunity for trialling strategies *Outcomes/consequences*: equitable between communities; smaller, remote places given earlier opportunities
Governance	*Intentions/motivations*: remoteness viewed as a strength; independence; links for support; inclusiveness *Outcomes/consequences*: flexibility; inclusiveness; increased capacity and social capital	*Intentions/motivations*: responsibility for welfare of citizens; co-ordination rather than control of aid *Outcomes/consequences*: co-ordination of aid whether directly or indirectly; timely provision; improved liaison and co-ordination with aid organisations; decreased perceptions of corruption and inequalities; remote places given earlier opportunities, better co-ordination of aid	*Intentions/motivations*: Independence from government but consider themselves part of overall aid system rather than separate from it *Outcomes/consequences*: equitable between communities; smaller, remote places given earlier opportunities, better co-ordination of aid

The path to these changes in Table 12.2 will not be straightforward. What is being suggested here will require transformational change of the aid system, both to increase the focus on prevention funding and activities, and to find ways to embrace the increasing number of participants in aid donation and distribution, while addressing the existing equity concerns.

12.3 Transformations

When the thinking on disasters changed from a focus on the physical hazard to the underlying vulnerabilities that, in combination with exposure, turn that hazard into a disaster, the fundamentals of how to respond also changed. We now know that many of these events do not have to become disasters. Therefore, it may be argued that there is an ethical responsibility to make every attempt to ensure that they do not. If so, then this must be the basic principle that drives policy and practice in this area. A focus on prevention and preparation logically follows, which ultimately is likely to reduce overall costs. This focus exists in policy and frameworks, but not necessarily in practice. What is required to make this happen may well represent a transformation of the disaster management systems, since the system as it currently stands is fundamentally skewed towards response. The shift is not away from response completely, but rather to increase equity in response for remote and non-remote areas, and increase the focus on prevention. Currently, the funding mechanisms, the operation of many of the aid organisations, and in some senses, the communities themselves, are all set up to encourage and enable response.

This situation fits with the Intergovernmental Panel on Climate Change (IPCC) definitions of transformation that includes strengthened, altered or aligned paradigms, goals or values towards promoting adaptation for sustainable development, including poverty reduction (IPCC, 2014a). Such transformations may involve value systems; regulatory, legislative or bureaucratic regimes; financial institutions; and technological or biological systems (IPCC, 2012).

Hindrances to transformation identified in this study include:

- The incentives for donor funding and aid organisations favouring the more visible immediate response,
- The rules and regulations surrounding access to adaptation funding,
- Expectations of aid with communities expecting to receive disaster response aid, and governments and aid organisations expecting to provide it. This in and of itself is not necessarily a hindrance, but flipping it around, there is currently a lack of expectations around the receipt and provision of adaptation aid and funding.
- Non-traditional aid providers participating only in the humanitarian response part of the disaster management cycle

Expectations and incentives will to a certain extent direct behaviour and action. Thus, in order to change the behaviour and action that is the practice, these expectations and incentives hindrances will need to be overcome. However, there are also enablers currently in place. The need for a shift in focus is widely recognised by participants in this study, and within the broader field, and is a stated priority of regional frameworks. This means that while the incentives inherent in the current system may represent obstacles, the overall motivations are different. The will exists to try to change the system. This will is expressed not only in the formal frameworks and policies, but by the people in this study. The linkages of traditional local and scientific knowledges are also specifically referenced in those frameworks, which bring the fields of CCA and DRM together. The bit-part played by the non-traditional aid organisations with their participation only in the response part of the cycle, may also in fact form an enabler since it means that during the non-response times when the planning and preparation for prevention work can occur, the field is quieter also. There are fewer organisations involved, and those that remain active are likely to be those more committed to and able to work in the longer term, such that the co-ordination and governance issues should be reduced.

Changing the rules and processes around funding will be difficult, but the inclusion of prevention work in the World Bank response to 2014's Cyclone Ian in Tonga is a good example of the possibilities. This work was included under the response banner, without the red tape that accompanies adaptation funding, but achieves the same goal. This may represent a formula that can be replicated elsewhere to better harness the opportunity provided by disasters. Finally, remote islands provide a ready made pilot location for testing adaptation options, in small and discrete places, while simultaneously beginning to address the equity issues they face daily.

12.4 Lasting impressions

This research has raised many issues and the experiences in undertaking it have been fascinating. Several findings have struck me as significant, interesting or unexpected:

- The consistency of results between the Fiji and Tongan remote island communities is noteworthy. Firstly, it strengthens the reliability of the findings from each one. Secondly, it suggests that the remoteness of these islands is at least as significant as which country they are in, despite differences in the policies and procedures of the two countries. The depth of knowledge of traditional warning signs of cyclones, and the remarkable similarities between the Fijian and Tongan island communities was striking. There is much talk of the importance of this knowledge, but little work being done on documenting or validating it. This clearly represents opportunities for future research.
- The notion from a community member that food rations after a disaster represent time was a completely different perspective. Having rations available frees up your time for construction repairs and re-planting crops. This is significant for remote island communities where so much time each day is spent getting food on the table. In urban areas, the challenge is more likely to be able to find a shop that is open and stocked. This changes the idea of need, and how those needs should be fulfilled. The requirement for food rations is usually based upon the

extent of crop damage in the remote island communities. Perhaps this is a narrow view of need.

- Being on the outer remote islands felt like a different world to the main islands, even within these countries that are themselves remote island countries. Upon returning to the main islands, this contrast was stark. But over time, I felt myself being pulled back into 'mainland world', and having to consciously remind myself that what I was hearing did not match what I had just experienced.
- The differences in the availability of response and prevention aid are completely disproportionate to the rhetoric of increasing focus on prevention. It seems that when there is a disaster, the funding tap is turned on, but only briefly and only for the immediate response.
- While there were many similarities between the islands in Fiji and Tonga, there seemed to be a stark difference in the social capital and cohesiveness. In Fiji, one village risked their lives to save the other in the middle of a cyclone. In Tonga, one village could tell me virtually nothing about the flooding experienced in their neighbouring village, despite it being serious enough to headline the news. This is an anthropological question that would take much more than one month on each island to even begin to unravel properly.
- Questions of poverty and dependence on the remote islands are complex indeed. Australians talk about the 'tall poppy syndrome' whereby outward expressions of wealth and success by individuals are derided by the community as a whole. It seems that remote communities are excellent examples of this in operation. Passing through one of the villages on Lifuka island in Tonga, I noted the presence of a small number of large, new houses that stood out as being different to their neighbours. I asked how that makes the others in the village feel, and received the response, "we find it hard to be nice to them". There is an implication that policy responses must be at a community rather than individual level.

- Linked to this issue of community level responses is the question around the interpretation of 'need' and therefore how and what needs should be fulfilled. An individual level assessment of needs-based aid system trying to fit into a group-oriented community means that something has to be compromised.

These impressions do not all fit neatly into one box and they are indicative of the complexity of the issues investigated in this thesis. For many of these issues, there are no easy answers, but much room for further work to be done.

12.5 Concluding thoughts

As with any in-depth research, there are many questions raised by this thesis, and directions for future research. The linking of climate change adaptation and disaster risk management at a regional level in policy frameworks should have an impact on policies and practices at local and national levels. This should be monitored, along with its impacts on funding availability and foci. The increase and expansion of the aid 'industry' does not have a clear and logical end point. If disasters are to become more frequent and severe, then more people in the world will have experience of them. If people are more likely to donate and become involved in disasters after having had similar experiences, then in combination with global communications and the ease with which people can make direct contributions, it is likely that this will continue to increase rather than taper off. How far this extends and how to make it work are areas requiring further investigation.

There is much to admire in the remote island communities, even though it arises from having few options. In Cyclone Ami, there was one lady completely alone on her island in Fiji when the cyclone struck. She saw and acted upon a traditional warning sign: the changed behaviour of a particular bird, *manu ni cagi*, which was her only warning. With no evacuation centre to escape to, she went to the smallest structure on the island, the kitchen, and wrapped it in banana leaves, to seal it and provide protection from the winds. Using only her own knowledge and skill, she survived the cyclone which destroyed every other building on her island. There is an amazing resilience to

be found in remote island communities that should be recognised, nurtured and learned from.

This piece of research has been intriguing from start to finish. It is multi-faceted and complex, full of dichotomies: remote and non-remote, humanitarian aid and prevention, vulnerability and resilience, developing and developed worlds, those who lost everything and those the cyclone passed by… I suspect these things will occupy my thoughts for some time to come.

Glossary of terms

The following terms in this glossary are taken from the IPCC 2014 report (IPCC, 2014b) unless otherwise stated.

Adaptation: The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate harm or exploit beneficial opportunities. In natural systems, human intervention may facilitate adjustment to expected climate and its effects.

- Incremental adaptation: Adaptation actions where the central aim is to maintain the essence and integrity of a system or a process at a given scale
- Transformational adaptation: Adaptation that changes the fundamental attributes of a system in response to climate and its effects

Adaptive capacity: The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.

Climate change: refers to a change in the state of the climate that can be identified (e.g. by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use.

Coping: the manner in which people act within the limits of existing resources and range of expectations to achieve various ends. In general this involves no more than 'managing resources' but usually means how it is done in unusual, abnormal and adverse situations (Wisner *et al*., 2004 p113).

Disaster: Severe alterations in the normal functioning of a community of a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic or environmental effects that require immediate emergency response

to satisfy critical human needs and that may require external support for recovery.

Disaster risk management: Processes for designing, implementing and evaluating strategies, policies and measures to improve the understanding of disaster risk, foster disaster risk reduction and transfer, and promote continuous improvement in disaster preparedness, response, and recovery practices, with the explicit purpose of increasing human security, well-being, quality of life, and sustainable development.

Disaster risk reduction: Denotes both a policy goal or objective, and the strategic and instrumental measures employed for anticipating future disaster risk; reducing existing exposure, hazard or vulnerability; and improving resilience.

Early warning system: The set of capacities needed to generate and disseminate timely and meaningful information to enable individuals, communities and organisations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss…A people-centred early warning system necessarily comprises four key elements: knowledge of the risks; monitoring, analysis and forecasting of the hazards; communication or dissemination or alerts and warnings; and local capabilities to respond to the warnings received (UNISDR, 2009).

Extreme weather event: Is an event that is rare at a particular place and time of year. Definitions of rare vary, but an extreme weather event would normally be as rare as or rarer than the 10^{th} or 90^{th} percentile of a probability density function estimated from observations. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense.

Governance: The way government is understood has changed in response to social, economic and technological changes over recent decades. There is a corresponding shift from government defined strictly by the nation-state to a more inclusive concept of governance, recognising the contributions of various levels of government (global, international, regional, local) and the

roles of the private sector, of nongovernment actors and of civil society (IPCC, 2012, p560).

Hazard: The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources (IPCC, 2012, p560).

Mitigation (of climate change): A human intervention to reduce the sources of enhance the sinks of greenhouse gases.

Mitigation (of disaster risk and disaster): The lessening of the potential adverse impacts of physical hazards (including those that are human-induced) through actions that reduce hazard, exposure and vulnerability.

Resilience: The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions (IPCC, 2012 p563).

Socio-ecological resilience: the ability to absorb disturbance, reorganise, and retain essential functions, processes, structures and feedbacks (Walker and Salt, 2006; Holling, 1973).

Storm surge: The temporary increase, at a particular locality, in the height of the sea due to extreme meteorological conditions (low atmospheric pressure and/or strong winds). The storm surge is defined as being the excess above the level expected from the tidal variation alone at that time and place.

Sustainable development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Traditional knowledge: A body of information passed down through generations in a given locality and acquired through the accumulation of experiences, relationships with the surrounding environment, and traditional community rituals, practices and institutions (Kelman et al., 2012 p13).

Transformation: A change in the fundamental attributes of a system, often based on altered paradigms, goals or values. Transformations can occur in technological or biological systems, financial structures, and regulatory, legislative or administrative regimes.

Tropical cyclone: A strong, cyclonic-state disturbance that originates over tropical oceans. Distinguished from weaker systems (often named tropical disturbances or depressions) by exceeding a threshold wind speed…A tropical cyclone is called a hurricane, typhoon, or cyclone, depending on geographic location.

Vulnerability: The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

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Appendix A – Information and consent forms

- Information sheet for Government and non-Government organisations
- Information sheet for communities
- Consent form for Government and non-Government organisations, Fiji
- Consent form for communities, Fiji
- Consent form for Government and non-Government organisations, Tonga
- Consent form for communities, Tonga

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SCHOOL OF SOCIOLOGY & SOCIAL WORK

Climate change adaptation in the South Pacific:

Responses to natural disasters in Fiji and Tonga

Information sheet for Government or Non-Government organisations

Invitation

This study looks at how communities respond to tropical cyclones, and is being conducted as part of a PhD for Ingrid Johnston, under the supervision of Professor Rob White, at the University of Tasmania, in Australia.

What is the purpose of this study?

The study aims to look at the responses of Governments, Non-Government Organisations and other Organisations who provide aid following a natural disaster, and the people, in the affected communities. As the climate and weather changes, there may be more severe weather events such as tropical cyclones, and so it is important to understand how and why people respond to them, and how these responses may need to change and adapt in future.

Why have I been invited to participate?

In this study, we would like to understand that perspectives of as many officials and organisations involved with disaster response and recovery as possible. You have been invited to participate as a representative of a relevant organisation or Government department.

What will I be asked to do?

You will be asked some questions about your organisation's experiences of cyclones and responses to them, and the interview/focus group should take about 45-60 minutes. As there will be a lot of information in this study, the interviews/focus groups will be audio recorded so that the researcher can listen to them again later when the report is being written.

Are there any possible benefits from participation in this study?

This study may benefit people within the community by increasing awareness about disasters such as cyclones, and giving people an opportunity to discuss what those events mean for this community. It may also help the Government, NGOs and the community to better understand how and why each responds in the way they do when disasters happen. We also hope that communities such as yours, who have a lot of experience with cyclones, may be able to help people in other places learn how to respond to disasters.

Are there any possible risks from participation in this study?

There are no foreseeable risks from your participation in this study.

What if I change my mind during or after the study?

If you change your mind, you can stop the interview at any time, without having to explain why. If this happens, you may request that the information you provided is not used in the study and your data will be removed at your request. Once the researcher has left the research site, it may not be possible to remove your data.

What will happen to the information when this study is over?

The data collected in this study will be kept in a secure location for a period of 5 years following publication of the report/thesis. Information from interviews will be confidential and not discussed with anyone else. If you are participating in a focus group, you should keep the discussions confidential, and others involved will be asked to so the same.
When the study is over and the report/thesis has been written, the researcher would like to return to the community to provide feedback to participants on the outcomes.

How will the results of the study be published?

The results of the study will be published in a thesis report, and may also be included in academic books and/or journal articles. It is possible that direct quotes may be used which would identify you through your position in your organisation. You may request that this does not occur.

What if I have questions about this study?

The researchers are Ingrid Johnston, who can be contacted on email at Ingrid.johnston@utas.edu.au and Professor Rob White, who can be contacted on email R.D.White@utas.edu.au or on +61 3 6226 2877.

This study has been approved by the Tasmanian Social Sciences Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study, please contact the Executive Officer of the HREC (Tasmania) Network on +61 3 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. Please quote ethics reference number H0012313.

This information sheet is yours to keep, and you can indicate your consent to participate either by signing a written consent form, or by saying that you consent on the recorded interview.

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SCHOOL OF SOCIOLOGY & SOCIAL WORK

Climate change adaptation in the South Pacific:

Responses to natural disasters in Fiji and Tonga

Information sheet for communities

Invitation

This study looks at how communities respond to tropical cyclones, and is being conducted as part of a PhD for Ingrid Johnston, under the supervision of Professor Rob White, at the University of Tasmania, in Australia.

What is the purpose of this study?

The study aims to look at the responses of Governments, Non-Government Organisations and other Organisations who provide aid following a natural disaster, and the people such as yourself, in the affected communities. As the climate and weather changes, there may be more severe weather events such as tropical cyclones, and so it is important to understand how and why people respond to them, and how these responses may need to change and adapt in future.

Why have I been invited to participate?

In this study, we would like to hear from as many people in the community as possible. Each person has different experiences and different points of view that are important in understanding how the entire community is affected. Older people in the community may have had more experiences with cyclones and severe weather events, and younger people in the community will have to deal with the changes taking place; men and women have different experiences of these events as they take on different tasks – keeping children safe, finding shelter, and providing food and water. The views of everyone are important.

What will I be asked to do?

You will be asked some questions about your experiences of cyclones and your responses to them, and the interview/focus group should take about 30-45 minutes. As there will be a lot of information in this study, the interviews/focus groups will be audio recorded so that the researcher can listen to them again later when the report is being written.

Are there any possible benefits from participation in this study?

This study may benefit people within your community by increasing awareness about disasters such as cyclones, and giving people an opportunity to discuss what those events mean for this community. It may also help the Government, NGOs and the community to better understand how and why each responds in the way they do when disasters happen. We also hope that communities such as yours, who have a lot of experience with cyclones, may be able to help people in other places learn how to respond to disasters.

Are there any possible risks from participation in this study?

It is possible that you might become distressed talking about past experiences with cyclones, if for example you are remembering someone who was hurt or injured. If that happens, you may stop the interview/focus group, and you may wish to seek support from a family member or someone else in your community.

What if I change my mind during or after the study?

If you change your mind, you can stop the interview at any time, without having to explain why. If this happens, you may request that the information you provided is not used in the study and your data will be removed at your request. Once the researcher has left the community, it may not be possible to remove your data.

What will happen to the information when this study is over?

The data collected in this study will be kept in a secure location for a period of 5 years following publication of the report/thesis. Information from interviews will be confidential and not discussed with anyone else. If you are participating in a focus group, you should keep the discussions confidential, and others involved will be asked to so the same.
When the study is over and the report/thesis has been written, the researcher would like to return to the community to provide feedback to participants on the outcomes.

How will the results of the study be published?

The results of the study will be published in a thesis report, and may also be included in academic books and/or journal articles. You will not be identifiable in any published results.

What if I have questions about this study?

The researchers are Ingrid Johnston, who can be contacted on email at Ingrid.johnston@utas.edu.au and Professor Rob White, who can be contacted on email R.D.White@utas.edu.au or on +61 3 6226 2877.

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This information sheet is yours to keep, and you can indicate your consent to participate either by signing a written consent form, or by saying that you consent on the recorded interview.

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SCHOOL OF SOCIOLOGY & SOCIAL WORK

UNIVERSITY OF TASMANIA

Climate change adaptation in the South Pacific: responses to natural disasters in Fiji and Tonga

Government / Organisation interview / focus group participants

1. I agree to take part in the research study named above.
2. I have read and understood the Information Sheet for this study.
3. The nature and possible effects of the study have been explained to me.
4. I understand that the study involves an interview/focus group discussion which may be audio taped.
5. I understand that participation involves no foreseeable risks.
6. I understand that all research data will be securely stored on the University of Tasmania's premises for five years from the publication of the study results, and will then be destroyed.
7. Any questions that I have asked have been answered to my satisfaction.
8. I understand that the researcher(s) will maintain confidentiality and that any information I supply to the researcher(s) will be used only for the purposes of the research.
9. I agree to be identified as a participant in the publication of the study results.

   Yes ☐ No ☐
10. I understand that my participation is voluntary and that I may withdraw at any time without any effect.

If I so wish, I may request that any data I have supplied be withdrawn from the research until December 2012.

Participant's name: _____

Participant's signature: _____

Date: _____

Statement by Investigator

☐ I have explained the project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.

If the Investigator has not had an opportunity to talk to participants prior to them participating, the following must be ticked.

☐ The participant has received the Information Sheet where my details have been provided so participants have had the opportunity to contact me prior to consenting to participate in this project.

Investigator's name: _____

Investigator's signature: _____

Date: _____

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SCHOOL OF SOCIOLOGY & SOCIAL WORK

Climate change adaptation in the South Pacific: responses to natural disasters in Fiji and Tonga

Community interview / focus group participants

1. I agree to take part in the research study named above.
2. I have read and understood the Information Sheet for this study.
3. The nature and possible effects of the study have been explained to me.
4. I understand that the study involves an interview/focus group discussion that may be audio taped.
5. I understand that participation involves the risk(s) that I may become upset or distressed when discussing past experiences of tropical cyclones and that I may stop participating at any time should this occur.
6. I understand that all research data will be securely stored on the University of Tasmania's premises for five years from the publication of the study results, and will then be destroyed.
7. Any questions that I have asked have been answered to my satisfaction.
8. I understand that the researcher(s) will maintain confidentiality and that any information I supply to the researcher(s) will be used only for the purposes of the research.
9. I understand that the results of the study will be published so that I cannot be identified as a participant
10. I understand that my participation is voluntary and that I may withdraw at any time without any effect.

If I so wish, I may request that any data I have supplied be withdrawn from the research until August 2012 (or date when researcher leaves the research site).

Participant's name: _____

Participant's signature: _____

Date: _____

Statement by Investigator

☐ I have explained the project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.

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Climate change adaptation in the South Pacific: responses to natural disasters in Fiji and Tonga

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- Any questions that I have asked have been answered to my satisfaction.
- I understand that the researcher(s) will maintain confidentiality and that any information I supply to the researcher(s) will be used only for the purposes of the research.
- I agree to be identified as a participant in the publication of the study results.

  Yes ☐ No ☐
- I understand that my participation is voluntary and that I may withdraw at any time without any effect.
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Investigator's name: _____

Investigator's signature: _____

Date: _____

Appendix B – Selected publications

Johnston, Ingrid (2014) Disaster management and climate change adaptation: a remote island perspective. Disaster Prevention and Management Journal, 23 (2), 123-137